American Cinematographer
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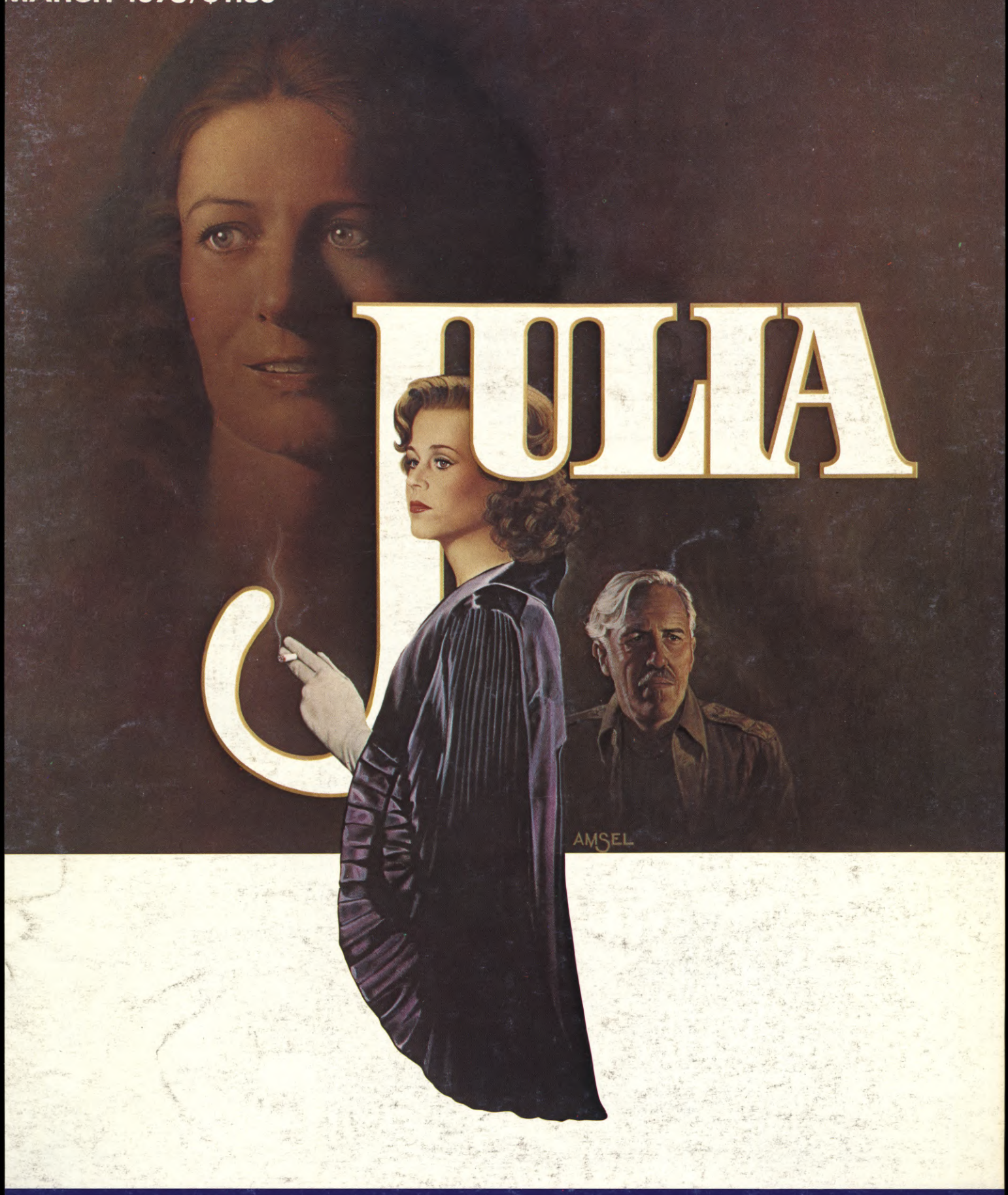

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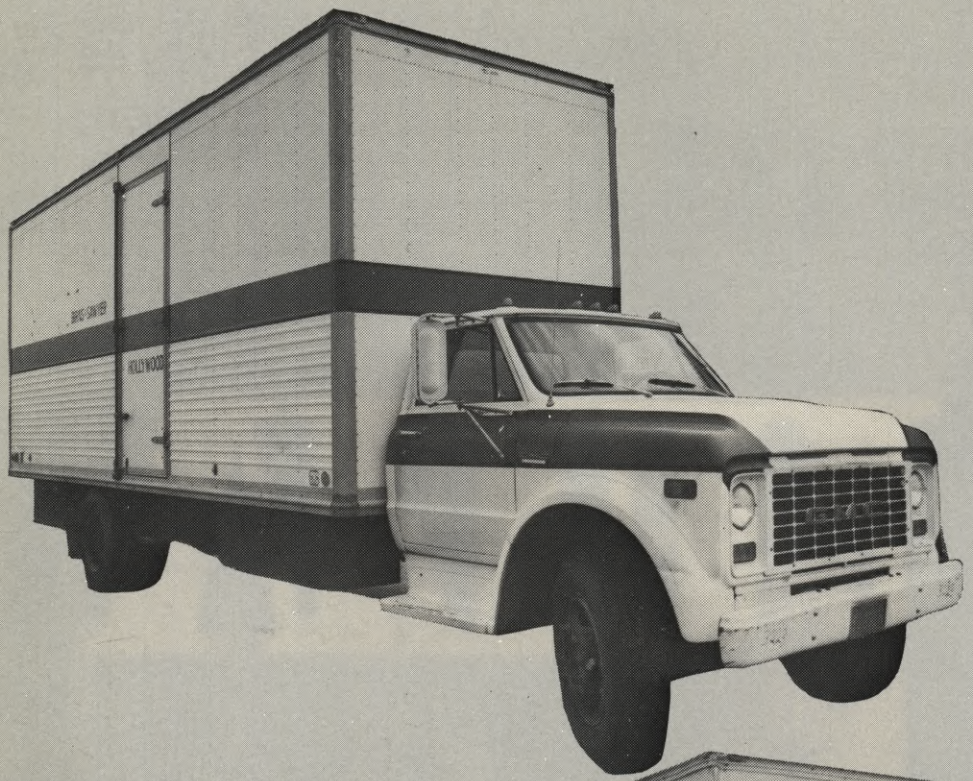

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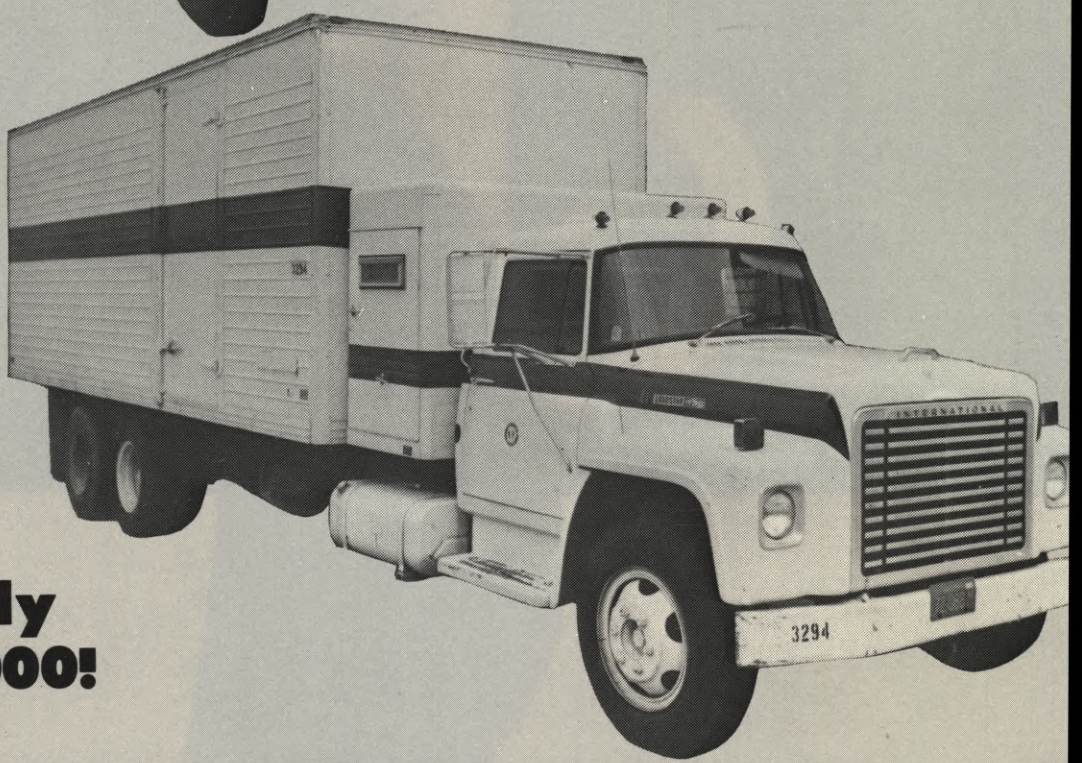

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American Cinematographer

International Journal of Motion Picture Photography and Production Techniques

The American Society of Cinematographers is not a labor union or a guild, but is an educational, cultural and professional organization. Membership is by invitation to those who are actively engaged as Directors of Photography and have demonstrated outstanding ability. Not all cinematographers can place the initials A.S.C. after their names. A.S.C. membership has become one of the highest honors that can be bestowed upon a professional cinematographer, a mark of prestige and distinction.

MARCH, 1978 **VOL. 59, NO. 3**

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ON THE COVER: Pictorial renderings of Jane Fonda, Vanessa Redgrave and Jason Robards, as they appear in the 20th Century-Fox production of "JULIA", adapted from the book "Pentimento", by Lillian Hellman, directed by Fred Zinneman and photographed by Douglas Slocombe, BSC. Artwork courtesy of 20th Century-Fox.

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WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE

MKM/SUPER8 SOUND EDITING TABLE AVAILABLE

Super8 Sound, Inc. of Cambridge, MA has been appointed as the exclusive U.S. Distributor for the new MKM/ Super8 Sound Editing Table. Manufactured in the U.S. since 1973, the MKM editing table has earned an outstanding reputation with Super-8 Filmmakers all over the world.

The new version of this fine editing machine—The MKM/Super8 Sound Editing Table—has a number of important new and improved features—including the substantial quality and service backing provided by Super8 Sound for all of its products.

Standard Features of the MKM/Super8 Sound Editing Table

The MKM/Super8 Sound Editing Table is a 4-plate (one Super-8 picture track and one Super-8 fullcoat track) electronically controlled horizontal editing machine operating on the same principles as 16mm editing tables—such as Steenbeck, KEM and Moviola. Features include: 800 ft reel capacity (almost 40 minutes at 24fps); An original picture head design incorporating an 8-sided prism, a 21V/150W projection lamp and a large (3.75"x5") bright groundglass rear screen; Variable speed control from 1-70fps forward and reverse; 3 fps creep speed; Manual inching; 24 fps sync speed with interlocking capability to any number of Super8 Sound Recorders; A flywheel stabilized sound transport for the Super-8 fullcoat track; Solid state amplifier with built in speaker; Declutching switches to allow independent transport of picture or sound for easy synchronization; Independent torque motors with cut-off switches; A large half-inch LED display and electronic frame counter.

All units feature power line inputs for 117, 220 and 240 Volts 50 or 60 Hz AC.

Editing Table Options

Options for the MKM/Super8 Sound Editing Table include a single-system sound head with flywheel stabilization and a Super 8 fullcoat two-track magnetic head with a stereo amplifier.

Availability

The MKM/Super8 Sound Editing Table is available immediately from Super8 Sound, Inc. in Cambridge and from all Super8 Sound Dealers Nationwide.

International

Outside of the U.S., the MKM/Super8 Sound Editing Table is distributed by Cinecraft International, Inc. 11 Ceasar Place, Moonachie, NJ 07076

More Information

Please write to Super8 Sound, Inc., 95 Harvey St., Cambridge, MA 02140 for a free copy of the *Super8 Sound Editing Book* describing both the horizontal MKM/ Super8 Sound Editing Table and the vertical Super8 Sound Editing Benches.

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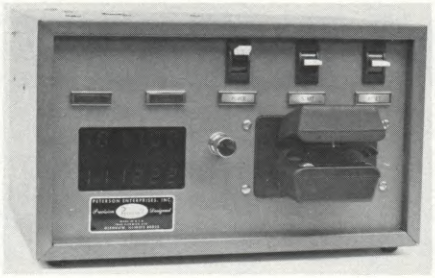

FRAME COUNT CUING SYSTEM

A new Frame Count Cuing System which is adaptable to most printers was recently introduced by Peterson Enterprises, Inc. It provides cue signals for the activation of automatic scene-to-scene light changes, fades and dissolves at the exact chosen frame line, therefore, eliminating the need for all notches or metallic patches on the film negative.

The system includes Bi-directional Counting and Tape Reading for use on panel printers; it accoommodates Super 8, 16mm or 35mm films, designed for both "Milestone and Batch" mode operation; Built-in Digital Display, FCC/ Program Tape discriminator; and Integrated Circuitry throughout. Two different models are available, one for counting "Frames Only" and one for counting both "Feet and Frames".

For further information contact Peterson Enterprises, Inc., 1840 Pickwick Avenue, Glenview, Illinois 60025.

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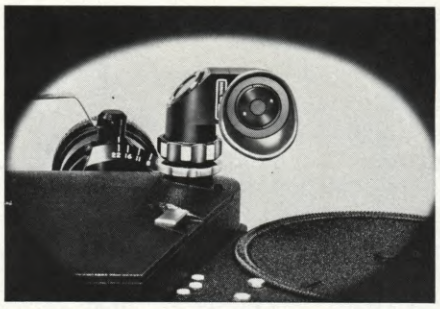

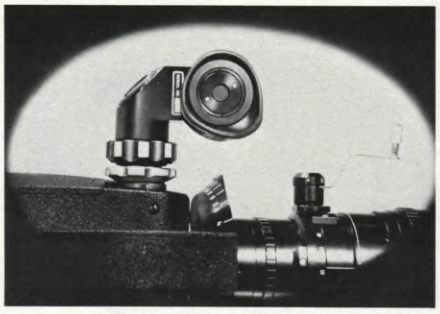

(ABOVE:) New Frezzi Viewfinder positioned for normal viewing by operator. (BELOW:) New Frezzi Viewfinder positioned for operator looking down from directly overhead.

NEW FREZZI VIEWFINDER IN PRODUCTION

Frezzolini Electronics Inc. introduced production-line models of its *Frezzi Viewfinder* for its professional 16mm "Frezzi-Flex®" motion picture (ciné) cameras at the exhibit of the Company's Export Agents, Cinecraft International, Inc., at the "Film '77" Conference held in London, England in July 1977. Frezzi Viewfinders are not in production at the plant in Hawthorne, New Jersey U.S.A.

Originally designed and produced for use on the Frezzolini® Frezzi-Flex® Model FR-16 ciné cameras, Frezzi Viewfinders are also available for the CP reflex cameras as well.

Supplied as "standard" equipment on the Model FR-16, the Frezzi Viewfinder features optimum balance and weight distribution with its length of less than one (1) inch (less than 25.40mm) from the film plane (ideal for "off-the-shoulder" filming).

Other features of the Frezzi Viewfinder are its large magnification of approximately 10:1; mirrors (instead of prisms) to provide brighter images; an eyepiece with backlight shutter (dowser); adjustability in a range of ± 5 diopters. The Viewfinder is easily locked in either of two (2) positions: camera operator's standard

Continued on Page 311

MP-30
Portable 35mm
Sound Projector
Systems
The MP-30 Portable 35mm Sound Projector Systems offer quality combined with versatility never before available with this type of projection equipment. Designed for portable use, the MP-30 is equally suited for the office, home, school, screening room, business, industry as well as in standard or minisize theaters. Precision engineered throughout, the MP-30 is manufactured with the highest quality components and offers brilliance and clarity of picture unequalled by similar equipment. The projector is easy to set up and operate and while it has the capacity of the largest 35mm projectors, it is small enough in size to be transported in the trunk or back seat of an automobile. It has a minimum of moving parts and is readily adaptable to various modes of operation. Best of all, the MP-30 is priced to meet even the most stringent budget. The projector is offered in three basic models: MP-30S (Standard), MP-30M (Interlock-Magnetic/Optical) and MP-30X (Xenon Lamphouse).
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Take power, for instance. Our rechargeable Powerbelts mean you *can* take it with you. More ampere-hours than ever before. Evenly distributed around your waist to give you the same kind of mobility TV film cameramen have relied on for years. Our fast-charge versions are at full capacity in just one hour, to give you more shooting and less waiting. □For more light on the go, compact Cine 60 Sun Guns fill the bill. Color-balanced for video, they give you lots of fresnel-soft lumens in the smallest spaces. Plus wide angle and focusing, too. □And if you prefer your Sun-Gun power packaged differently, we can give you Cine 60 NiCad reliability in a Powerpak/Sun Gun combination. □Our rechargeable Powerpaks are also available separately. In a variety of sizes, voltages and capacities to power just about anything you have in mind. Video. Audio. You-name-it. Just slip it on your belt or into a pocket...and go! □While our rugged, reliable power systems take a load off your mind, we can take a load off your shoulders, as well. With a complete line of comfortable shoulder pods and body braces that let you concentrate on what you're shooting...instead of your aching sacroiliac. Whatever the configuration of your camera, we've got a pod to match. □Cine 60 has a lot of other valuable tools to make life easier for video people. Like our Snaplok, to let you snap-on, snap-off cameras and other equipment from tripods, stands, pods, etc.—in less time than this sentence took to read. Plus suction mounts, compact quartz lighting... and that's just the beginning. With all the things you're asked to do these days, it pays to have all the help you can get. Why not call or write for our catalog today?

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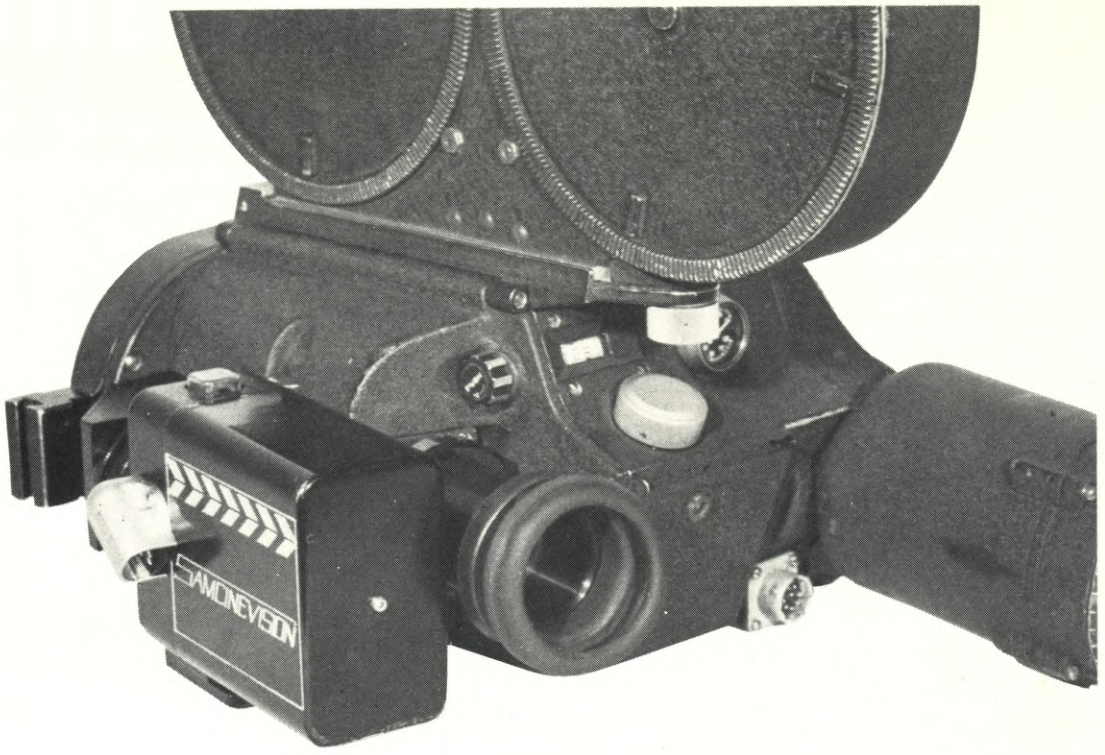

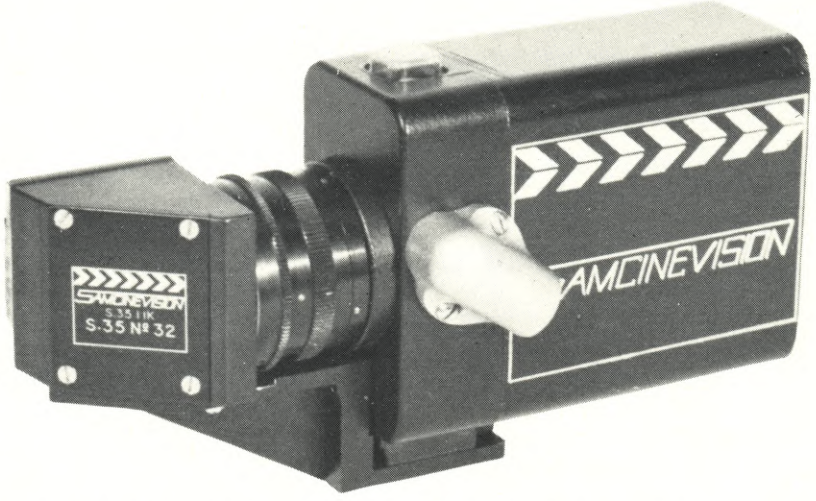

SAMCINEVISION ON A MITCHELL S35 Mk II CAMERA

A modification to the Mitchell S35 Mark II door makes it possible to fit a Samcinevision TV viewfinder by sliding the TV camera and a beam splitter mirror into positions on the camera door. It takes only a few seconds to fit or to remove.

The normal optical viewfinder facility is still available for the camera operator to use, as are the viewing filters and the light trap. When the TV viewfinder is not in position the normal image magnification system may also be used.

Samcinevision uses a modified Phillips LDK25 CCTV camera fitted with a Chalnicon tube. Modifications to the time base reduces flicker to a minimum when the camera is run at 24 frames per second.

A single control box, which can be set nearby, houses the TV control unit, a 12 Volt battery and all the necessary electronics.

Samcinevision for the S35 Mark II camera is one of a new and improved series of TV viewfinders specially tailored to all the most frequently used 35mm motion picture cameras. Available exclusively from Samuelsons.

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You're looking at more than a decade of close cooperation between professional cinematographers and a camera company that's attentive and responsive to their needs: Canon's evolutionary new Scoopic 16MS. Latest generation of a motion-picture camera which has become the most popular self-contained news and documentary model in the world. Now, far more versatile and flexible than ever.

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Snap-in 400′ lightweight CP or standard Mitchell magazines.

We also built on the proven advances of the Scoopic 16M. Like the 12.5-75mm f/1.8 Macro Zoom that rack focuses down to 3½″ and provides unique 'optical dollying' effects. The brighter finder with built-in T-stop indication. The wider auto exposure range. As well as a single-frame control and improved frame/footage counter (boons to animation and time-lapse). The efficient, dependable battery/transport system that doubled capacity to 1600′ on a single charge of its removable battery. Plus many other features, too numerous to mention.

Wider wides and tighter telephoto shots.

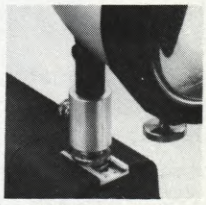
Then, even though no camera at twice the price offers all these features, we added more.

Scoopic 16MS features a magazine adapter that boosts continuous capacity to 400′, without losing the camera's internal 100′ capability. For sync sound, there's an optional internal crystal control, accurate to .003% over -20 to +50°C. Plus a refined metering system that functions over a wider range of ambient conditions. And more.

Easier-to-add, built-in filtration.

Our new Scoopic also boasts built-in quick-change filtration. Supplementary lenses for 9mm wide-angle and 112.5mm telephoto shots with no f-stop loss. And a host of other accessories, including: Remote control. Sound barneys for use with and without magazines. Cold weather shooting case. Even a light-mounting stud to eliminate extra brackets and bulky adaptors.

But whether you consider the basic Scoopic 16MS with lens, battery charger, sunshade, CdS cell hood, gel filter holders, lens cap and deluxe hard case *(all standard!)*...or fully-loaded, with all its accessories, perhaps the best news is that it's still *priced to be one of the best values on the professional market today.* For news documentaries, educational and industrial films...and now, even features and commercials. Why not see your Canon dealer for a demonstration...or contact us for more information.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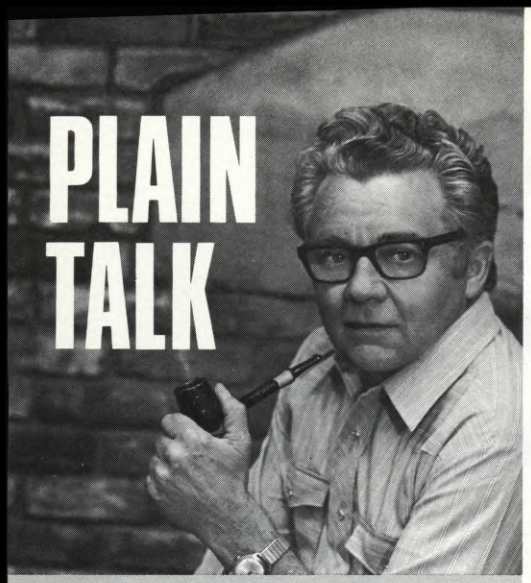

by J. Carl Treise

When money's tight, it's good sense to ask yourself "Do I buy a new processor or rebuild the old one?"

Before you shell out a lot of dough for a shiny new model, I suggest you take a fresh look at your old film processor.

You may discover that you've got more going for you than you realize.

In the first place, your present unit might have plenty of good machinery left in it. Many parts in a processor don't usually wear out. Besides, you've got a big bundle of money tied up in it, most of which you aren't going to get back if you sell or trade it in.

It may be possible to modify your old equipment and give you exactly what you're looking for.

Often all it takes are a few new accessories . . . or a new drive system . . . or a change in the tank set-up.

And the cost is peanuts, in comparison to the price of a new unit.

So, before you take the leap, talk it over with your production people and decide what you want. Then make a few calls around. You might find out that "Old Betsy" will do just fine and you'll keep a lot of money in your own pocket. Which is where it should be.

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QUESTIONS & ANSWERS

Conducted by CHARLES G. CLARKE, ASC.
and WINTON HOCH, ASC.

(Inquiries are invited relating to cinematographic problems. Address: Q. & A., AMERICAN CINEMATOGRAPHER, P.O. Box 2230, Hollywood, Calif. 90028.)

Q I am having a problem understanding the theory behind "Slit Scan Process". Can you suggest any company which could give a practical demonstration of the process?

A Slit scan is often difficult to grasp in the mind's eye and I suggest that for your own information you perform a series of simple experiments using a Polaroid camera. Set up the camera in a darkened room on a tripod with a cable release allowing you to hold the shutter open for any period of time. Using various light sources such as a match, a flashlight, a fluorescent tube (moveable) shoot various exposures moving the light sources before the camera while the shutter is open.

Once you realize the complexity of images you can produce by virtue of moving and changing these light sources, i.e. turning them on and off as they move or modulating them in any way to create patterns and textures of the resultant exposure, I think you will begin to more fully understand the unlimited possibilities of accumulating light on film in this manner.

Since the imagery you can produce using this technique is a function of both space and time, this process (which is more accurately called "Streak Photography") can produce imagery that does not exist in the real world. It, therefore, requires a high degree of previsualization in order to design the proper combination of lights, color and movement to accumulate the desired result on film.

I think this experiment will help you more than any written description

—Doug Trumbull

Q In the October 1977 issue of AMERICAN CINEMATOGRAPHER, I see that Frank Phillips used the new Eastman Color Negative at f/4 with only 70 foot candles. By my calculations this means an exposure index of 286, quite a departure from the film's ASA exposure index of 100. Is this practice common? Could this be done in 16mm with acceptable results? How about with other emulsions, such as Ektachrome Commercial?

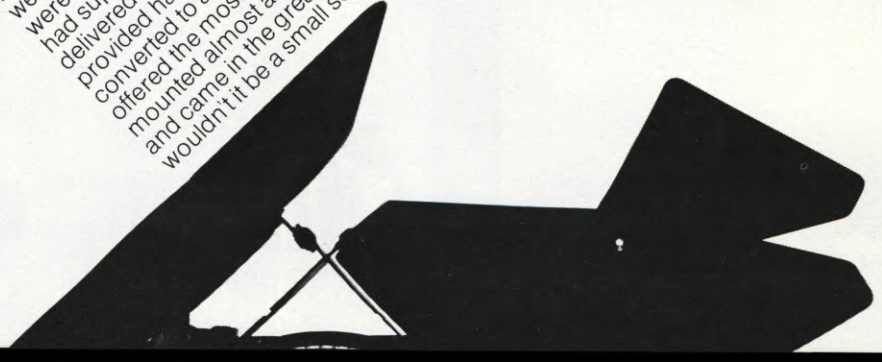
A Since Mr. Hall asks four related questions, I will answer them in order:

1. A method of determining the speed of color negative motion picture film has not been specified by the American National Standards Institute. Therefore, in the true sense of the word, an ASA or ANSI speed of such a film does not exist. The exposure index value given in the data sheets for Kodak and Eastman motion picture films have been determined by practical picture tests. Suitable safety factors have been included to allow for differences in equipment, variations in technique, and other conditions. These index values are intended only as starting points from which the actual working values can be determined for the particular equipment, methods of use, and working conditions. When Frank Phillips states in an interview that he used Eastman color negative 5247 at f/4 with 70 foot candles, he means that after careful tests using his equipment and operating conditions, he determined that this light level gave him the technical and artistic results that he wished to achieve for this particular picture. If the mechanical conditions and artistic requirements were to change, he might use quite a different lighting level.
2. This practice is recommended by the film manufacturers and is common with most professional cinematographers.
3. The same criteria would apply equally to both 16mm and 35mm color negative films.
4. In the case of 16mm, 8mm and Super-8 reversal color camera films intended for direct projection in motion picture photography, there is an ANSI standard, PH22.146-1973, but this does not apply to EASTMAN EKTACHROME Commercial. The speed of Ektachrome commercial, like the color negative films, is determined by practical tests, taking into account the equipment, lighting techniques, processing conditions, and the artistic effect desired by the cinematographer.

—R. T. Ryan, Eastman Kodak Co.

What if

what if one light
were the best for news,
were unexcelled for production work,
had super-smooth beam patterns,
delivered an 11:1 focus range,
provided hard or soft illumination,
converted to a high-intensity source,
offered the most advanced accessories,
mounted almost anywhere,
and came in the greatest kits—
wouldn't it be a small sensation?



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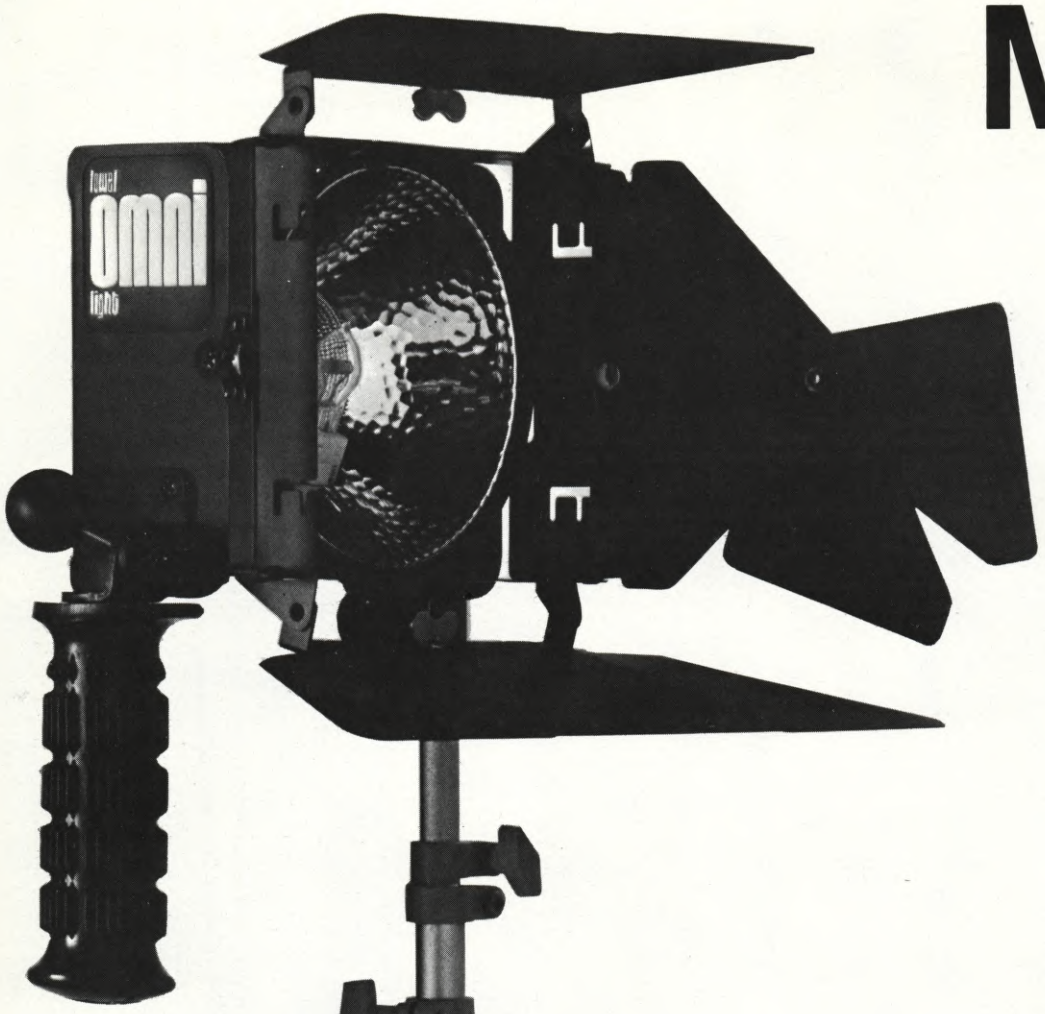


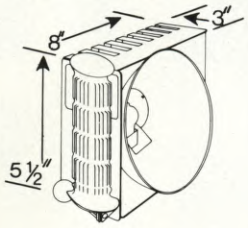
sensational design

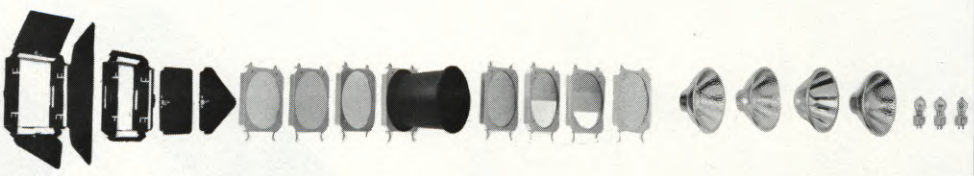
Lowel Omni-light is the product of a five year program to create the ideal 650 watt location light. A focussing instrument engineered for compatibility with other Lowel equipment. A system to meet the most exacting professional requirements.

Omni-light is remarkably small. But its versatility and performance are sensational. You can convert Omni in seconds, without tools, as your needs change or the job requires. From a hard light to a soft light. From news coverage to feature production. From fast moving documentary to table top shooting. From battery power to wall outlet. From 120 volts to 220/240 volts. From hand operation to stand operation. From a focussing light to a high-intensity instrument. It's hard to believe Omni is only one light.

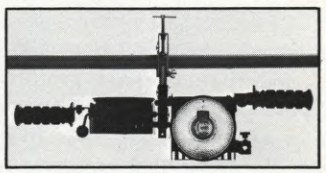
The secret is Omni-light's remarkable component system. You already own part of it if you have Lowel Tota-lights. But even without accessories, the Omni-light is a truly remarkable unit.

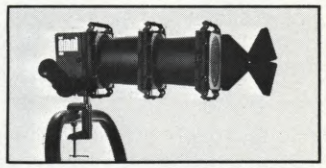
lowel omni-light

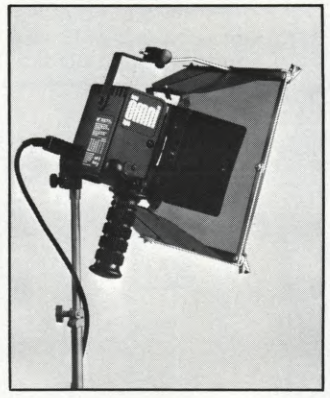


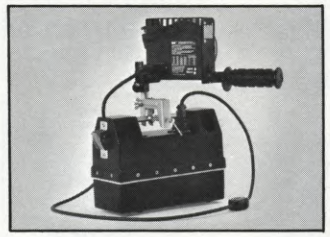


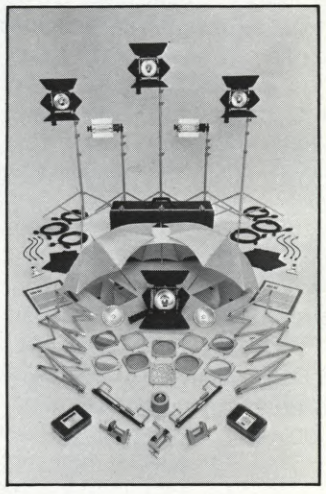
small( ) sensation

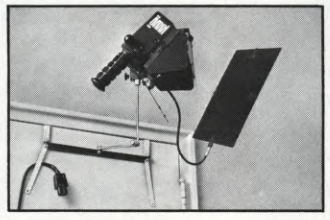












sensational performance

Omni-light's range of focus depends on the lamp and reflector used. Its minimum ratio exceeds 6:1. And Omni's maximum is an unprecedented 11:1. Full spot intensities are exceptionally high. Beam patterns are extremely even and continuously variable through a responsive direct-drive mechanism.

Omni-light fits on standard ⅝" studs, yet locks wobble-free on smaller ones. All four doors have extending wings. Doors are instantly removable with ¼ turn fasteners, but can remain attached for kit storage. Two Omni-lights stack on one stand, without accessories. One hand can hold and focus the unit.

Double wall construction and generous convection cooling ensure maximum life for lamps and internal wiring. Omni-light is built for sensational performance—even after years of hard use.

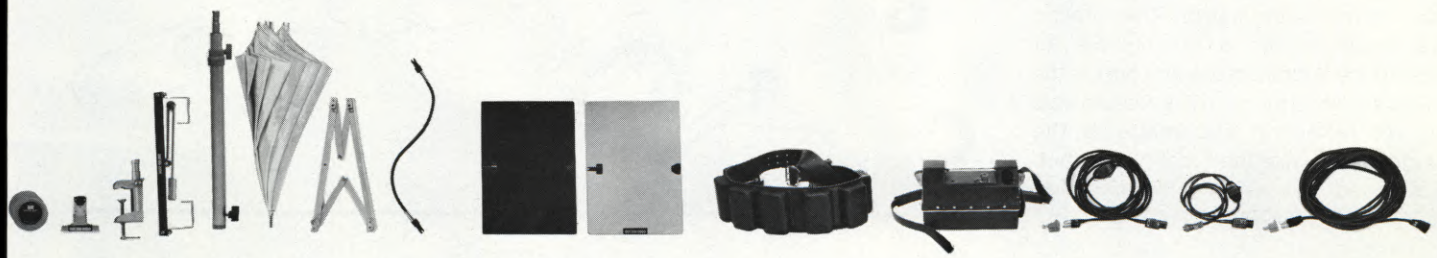
sensational kits

The Solo kit (shown at bottom right) is the most complete of the Omni-kits. The four Omni-lights and 2 Tota-lights travel and work together with inspired compatibility. They even share some of the same components. Everything fits neatly inside a 28" x 18" x 9" case.

There are four other Omni-kits. Three even use smaller cases—only 6" deep. Yet all have space for additional equipment. We even provide customizing information. An essential part of Lowel lighting systems is our first hand knowledge of location work. Professional experience that assures phenomenal versatility and performance.

The small sensation is performing now at authorized Lowel Dealers. For a brochure, contact us. Lowel-Light Manufacturing Inc. 421 W 54th St. NY, NY 10019 212-245-6744 West Coast: 3407 W. Olive Ave. Burbank, Ca. 91505 213-846-7740. Lowel Omni-light, Lowel Tota-light are trademarks of Lowel-Light Manufacturing Inc.

lowel™



CINEMA WORKSHOP

By ANTON WILSON

SHUTTERS III

The first successful mirror-reflex shutter system was designed in the 1930s by Arnold and Richter. Their twin-bladed rotating device has remained the favorite choice of camera designers to this day. Not only do all Arriflex cameras retain this shutter, but many other manufacturers employ similar reflex systems. The Eclair NPR, CP-16 Reflex, as well as many 35mm designs, employ the rotating mirror shutter.

Despite this overwhelming popularity, there have been some distinct departures from the classical rotary design. Both Beaulieu and Eclair (ACL) employ mirror-reflex viewing optics, but do not use a rotating mirror shutter. Each, however, employs a totally different and unique alternative to the rotary design.

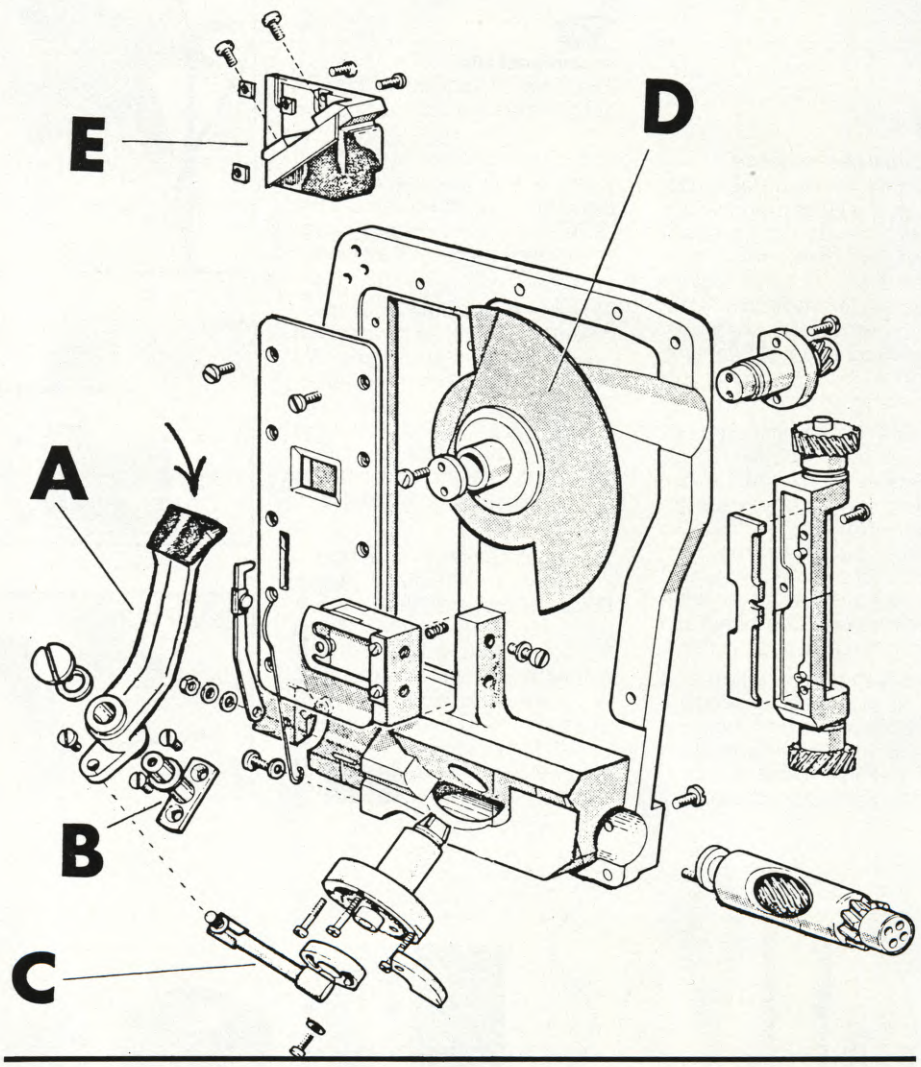
The Beaulieu employs a reciprocating mirror shutter that moves linearly up and down. It is sometimes referred to as a "guillotine" shutter because its movement resembles that infamous device. Like the Arriflex design, the Beaulieu mirror shutter performs a dual function. It blocks the light from reaching the film during pull-down and also reflects the image onto the ground glass for viewing. The Beaulieu design is very compact and is one of the very few mirror-reflex cameras that accept 'C' mount lenses. Because of the linear type mechanism, the Beaulieu is not a quiet camera. However, it makes no pretense of being a noiseless design.

The Eclair ACL takes a different approach. Because it is a noiseless type camera, the pure reciprocating or guillotine type shutter was ruled out. The Eclair engineers chose an oscillating design which is a hybrid of both the rotating and linear principles. More important, the ACL does not employ a "mirror-reflex shutter" in the true sense of the expression. The ACL employs a standard focal-plane shutter, as well as the totally separate oscillating mirror. The rotating focal-plane shutter is responsible for blocking the light from the film during the pull-down, while the mirror is responsible only for reflecting the image to the ground glass while the focal-plane shutter is closed. Like a rotary mirror shutter, the ACL mirror pivots about an axis, but it does not make a complete revolution.

FIGURE I is an exploded view of an Eclair ACL shutter mechanism. The mirror is indicated by an arrow at the end of part "A". The mirror arm ("A") rotates on the axis "B", but it only swings a small arc that is merely a fraction of a complete revolution. The connecting rod "C" swings the mirror assembly across the image path, where it comes to rest just to the right of the aperture. At this point in time, the focal-plane shutter "D" opens for exposure and then closes. After it closes, the mirror swings across the image path again, and this time comes to rest on the left side of the aperture at which time the focal-plane shutter opens again. Thus, while the focal-plane shutter rotates at full speed, the mirror arm swings alternately from side to side at half the cycle rate of the frame speed.

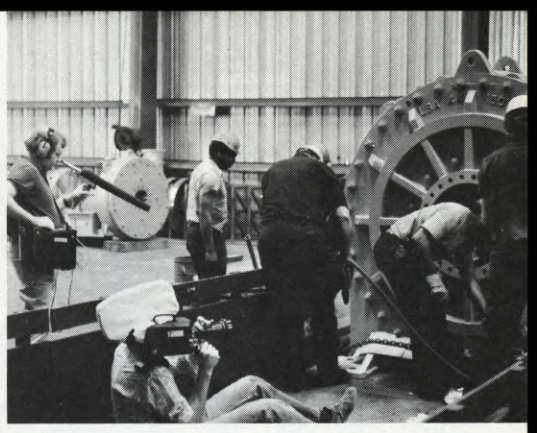
Continued on Page 311

FIGURE I—Exploded view of shutter and reflex mechanism of the Eclair ACL camera. The mirror (arrow) swings on the end of the mirror arm (A), which pivots on axis (B). Connecting rod (C) is geared to the motor and drives the mirror arm back and forth across the aperture. As the mirror passes through the light path, the image is reflected up to the ground glass/viewing assembly (E). Note that the swinging mirror is *not* a shutter, fbut is only used for reflecting the image for viewing. It is the rotating focal-plane shutter (D) that blocks the image from the film plane during pull-down.



CP-16R

The ideal production camera for industrial films.



(Above) Filming the loading of a giant pump. VanDerKloot used a special dust cover to protect his magazine from the burning dust of the iron pours. Freelancer VanDerKloot has worked on a variety of projects for many companies, including IBM and Newsweek Broadcasting Service among others.

Atlanta, Georgia, a major cultural and industrial center in the emerging new South, is rapidly becoming an important film production center, attracting feature and commercial production companies as well as independent filmmakers.

"A sponsored industrial film, by its very nature, combines various aspects of different film forms: the commercial, the instructional film, the news feature and the documentary," says freelance filmmaker William VanDerKloot of Atlanta. "In addition, each 'industrial' comes complete with its own unique set of problems."

The industrial film *"Performance: the GIW Story"* — produced and shot by VanDerKloot for GIW Industries of Augusta, Georgia — was no exception.

"GIW Industries manufactures large industrial slurry pumps which are used in dredging and mining operations. The largest of these weigh well over 15 tons," says VanDerKloot. "Not exactly the sort of product a salesman can take along in his briefcase.

"Shooting within their steel plant outside Augusta was a veritable 'photographer's nightmare.' The plant was basically one giant room, with a mixture of various light sources: tungsten, fluorescent, sodium vapor, mercury vapor, and some daylight filtering through small skylights and large doors.

VanDerKloot and soundman Patterson shooting a sequence in GIW's computer room. "The CP-16R was quiet enough even in the tightest office areas so that we never had to blimp it," says VanDerKloot.

"The average illumination level was between 8-16 footcandles. Moreover, their manufacturing equipment occupied much too large a space to light properly within the film's time and budget restrictions. Besides, heavy use of lighting equipment would have drastically intruded on the workers' normal environment, something we wanted to prevent.

"To make matters worse, many of the processes we were to film were almost impossible to schedule accurately, and most were essentially non-repeatable; which meant that we would have to hustle in order to cover enough angles on film. Our equipment and filming methods had to be as flexible as possible, without sacrificing on-screen quality.

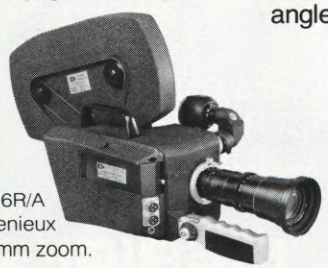
"I was certainly glad to have my CP-16R/A with semi-automatic exposure control and Angenieux 10-150mm zoom lens on this assignment. Recording double system was soundman David Patterson with a Nagra and a Sennheiser shotgun mike.

"The CP-16R was quiet enough even in the tightest office areas so that we never had to blimp it. And the built-in exposure control was especially helpful during the iron pours and helicopter shots. Throughout the shoot, I used it in conjunction with my incident meter as a *spot meter* to double check my readings.

"The Angenieux 10-150mm allowed me great freedom over framing, and worked well in low-light situations. Though we shot indoors mostly with available light, we got excellent results with TVC's Chem-Tone process and pushing the 7247 color negative two stops (to ASA 500).

"Our filming environments ranged from a cool computer room to the humid climate of the central Florida phosphate fields (where GIW pumps were at work), to the burning dust of the iron pours. During this time, over 7000 feet of 7247 color negative ran through the camera — all without a jam or a single scratch on the emulsion.

"The client was very pleased with the results, and so was I. Once again my CP-16R has proven itself an enormously versatile *production camera:* silent, reliable, and easily adaptable to a myriad of difficult filming situations."



CP-16R/A with Angenieux 10-150mm zoom.

For further information, please write to:

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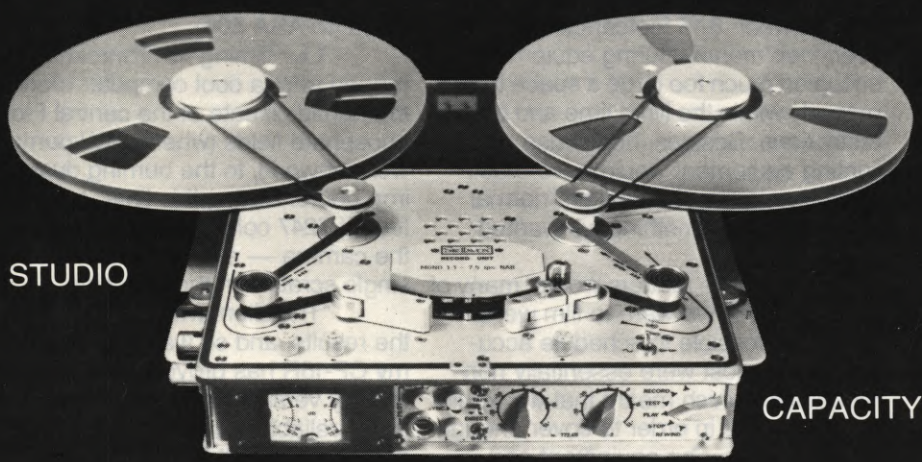

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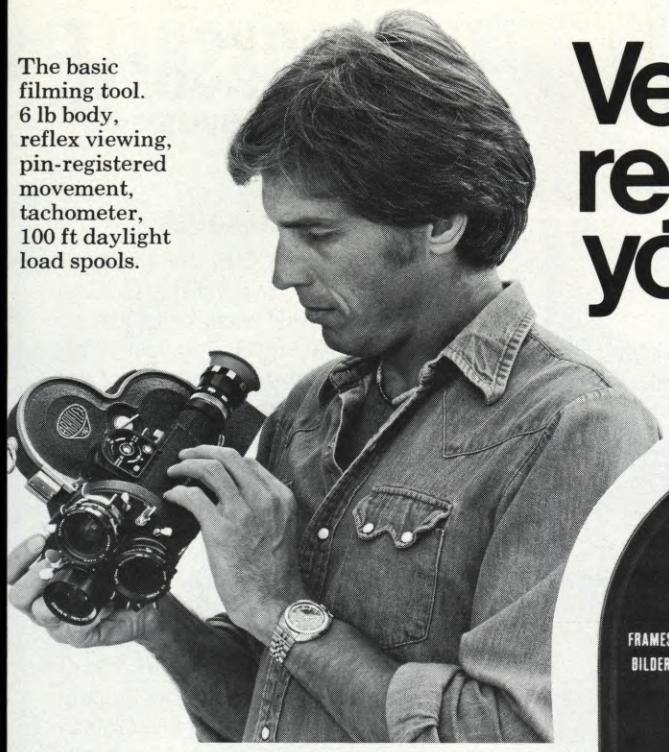
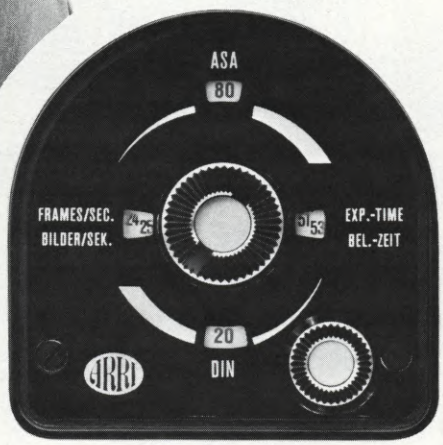
Veteran workhorse rejuvenated: Now you can add APEC to your 16S/B



The basic filming tool. 6 lb body, reflex viewing, pin-registered movement, tachometer, 100 ft daylight load spools.



Plus fiber optics, crystal control, and the many other components of the 16S/B system.

If your 16S/B is S/N 12001 or higher, you can buy a door with APEC built in.

The 16S/B is continually being updated. APEC is one example. Here are some others:

Fiber Optic Screens (with aperture markings) to replace your groundglass: Better light transmission, easier focusing. A Bridge Plate for balancing long lenses and mounting matte boxes. A crystal control Universal Motor (with Pilotone) that also runs at speeds from 0 to 50 fps and single frame.

APEC does *not* mean automatic exposure. It's a built-in meter with its needle visible in the finder.

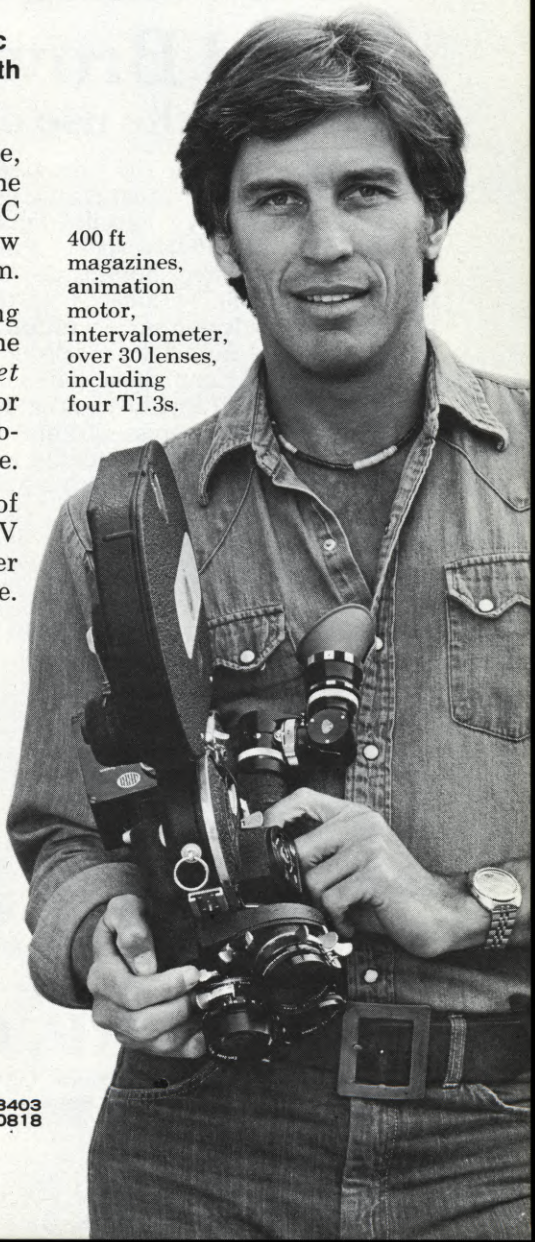
With your eye at the eyepiece, you can frame, focus *and* set the f stop. The through-the-lens APEC system tells you precisely how much light is getting to the film.

Zooming in for an APEC reading is a lot faster than walking onto the set. And sometimes it's not easy to *get* there. Shooting surgery, for example; or timber wolves. Or a speaker at the podium. Or fungus through a microscope.

APEC reads the central third of the frame, off the mirror shutter. UV rays are filtered out. ND wedges center the reading on the cell's response curve. APEC is *accurate*.

Periscope viewfinder attachment.

12V DC Crystal Control Motor



400 ft magazines, animation motor, intervalometer, over 30 lenses, including four T1.3s.

Reports of its death have been exaggerated: 16S/B

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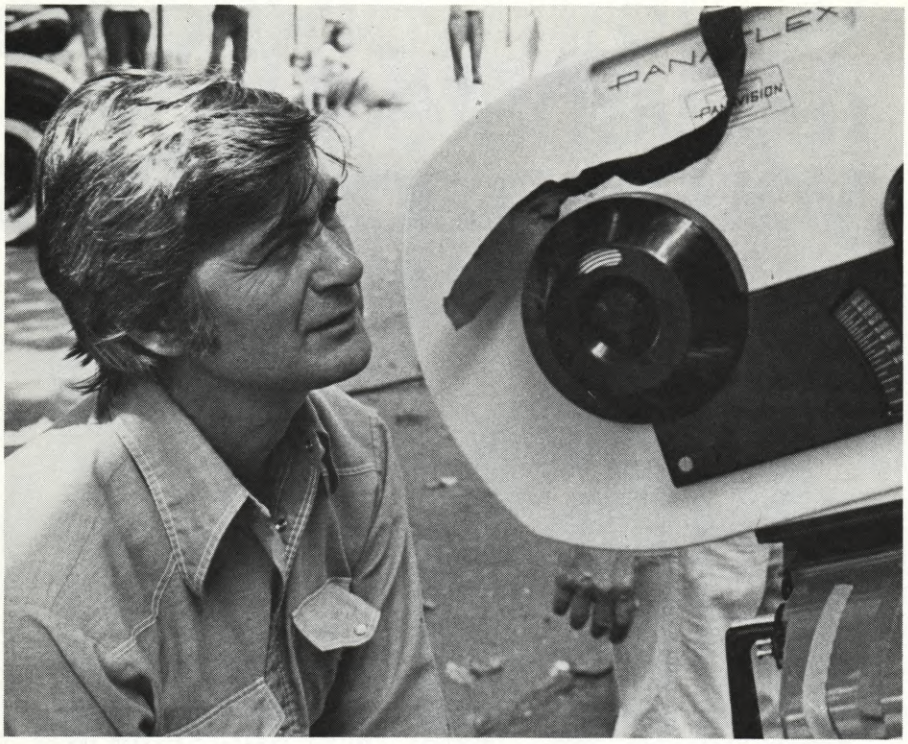


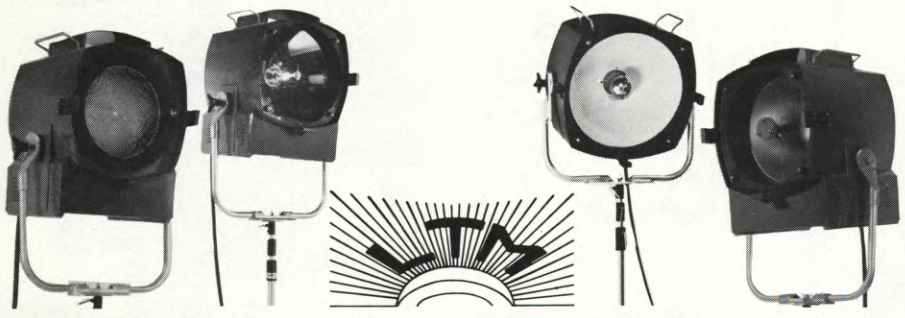
Award-winning Cinematographer

Ed Brown, A.S.C.

on the use of HMI lights:

"We saved money for the producers by using HMI lights — money that could be and was put to cinematic use elsewhere in our films. LTM's HMI lights gave us quality controlled light, particularly since their fresnel lenses appear to be free of 'hot spots.' Pound for pound, they are unbeatable as booster fill light when shooting day exterior. When used for day interior on location, you will be amazed at the ease with which you can balance against the outside and still retain perfect flesh tones. The single source combined with the fresnel lens delivers a clean modelling type light, which allowed us to cut and shade without multiple shadows. These new HMI's pack a high rate of intensity and a distinct advantage in balancing. As I see it, they have another great advantage, too, in the low amperage required to operate them. I'm always looking to work with improved equipment, and I've found LTM's HMI lights very useful to me on both feature and commercial productions."

Ed Brown speaks from thirty years of experience. His outstanding work on the ABC-TV special, "Eleanor and Franklin," won him an Emmy. His first use of HMI lights was on "Nunzio", a Universal feature he shot in Brooklyn. In Hollywood, filming an Avis commercial for Rick Levine Productions, he rented twelve LTM HMI lights from Cine-Pro, including 4000W, 2500W, 1200W and 575W units. We are grateful for his stated professional opinion.



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THE BOOKSHELF

By GEORGE L. GEORGE

GENRES AND TECHNIQUES

In THINGS TO COME, the history of the sci-fi film is told in a lavishly pictorial volume, with a well researched text by Douglas Menville and R. Reginald, offering a detailed and expert survey of the genre (Times Books $15./8.95). Jeff Rovin's MOVIE SPECIAL EFFECTS discusses in easy-to-follow style and with abundant illustrations the techniques used over the years to produce visual wonders, from Méliès' *Trip to the Moon* to *Jaws* (Barnes $17.50).

In THE FILMS OF GEORGE PAL, Gail Morgan Hickman surveys the filmmaker's career from his early puppet films to his spectacular sci-fi and fantasy epics (Barnes $17.50). Brent Maddock's THE FILMS OF JACQUES TATI traces the origins of the French director/actor's comedies to the work of Chaplin, Keaton, Langdon, Lloyd and the early Gallic comedian Max Linder (Scarecrow $7.).

Two compilations of performers' credits come from Sacrecrow Press. Andrew A. Aros, in AN ACTOR GUIDE TO THE TALKIES 1965 THROUGH 1974, lists full cast and producer credits, and year of release for some 3500 features, both domestic and imported, shown in the U.S. ($27.50). In FILM ACTORS GUIDE: WESTERN EUROPE, James Robert Parish lists continental performers' credits in features through 1975, with country of origin and year of release ($14.).

Impressive in size and immensely appealing, Jeff Greefield's TELEVISION: THE FIRST FIFTY YEARS is a lavishly illustrated history that recounts the medium's progress in all its facets: electronic wizardry, personalities, programs, social implications, and even a peek into the future. The text is thoughtful, informative and brisk, with the right amount of critical comments (Abrams $35.).

In MOTION PICTURE, TELEVISION AND RADIO, Linda Harris Mehr has compiled an exhaustive catalog of manuscripts and special collections belonging to some 70 educational institutions, studios, museums, historical societies in 11 Western states. The often unique nature of the collections can be a boon to serious researchers (G.K. Hall $27.).

★ ★ ★

WORDS AND PICTURES

The script of Ingmar Bergman's newest film, THE SERPENT'S EGG, is a somber and disturbing depiction of Germany in the 20's, when social unrest created the climate for Hitler's eventual rise (Pantheon $7.95). DAVID HAMILTON'S BILITIS is part screenplay, part production notes, but mostly superb photographs, delicate and subtle, from the film that Hamilton based on Pierre Louy's erotic poems (Cinegraphic Press $24.95).

A complete record of the movie THE BEATLES IN RICHARD LESTER'S A HARD DAY'S NIGHT, edited by J. Philip Di Franco, recaptures in some 1100 stills and the film's complete dialogue the essence and flavor of this by now classic madcap comedy (Chelsea House $12.50).

★ ★ ★

THE CULT OF PERSONALITY

Hollywood's endemic machismo is dissected by Joan Mellen in a sharply factual book, BIG BAD WOLVES. Her study, solidly buttressed by examples from many films, views the supercharged virility instilled into male roles as a deliberate camouflage of the basically violent nature of much of American culture. This is interpretive history at its best, an entertaining and provocative work of creative research (Pantheon $12.95).

Three egregious specimens of male supremacism are displayed in current books. THE PRIVATE ELVIS, slightly expanded by May Mann from her original ELVIS AND THE COLONEL, sees Presley as the phallic symbol who helped liberate the sexual hangups of the 50's (Pocket Books $1.95). Today's instant idol, Sylvester Stallone, depicts, in his richly illustrated OFFICIAL ROCKY SCRAPBOOK, the struggles that preceded his swift rise, including excerpts of the film's script (Ace $1.95). In AMERICA, WHY I LOVE HER, he-man patriot John Wayne waves Old Glory, reprints words and music of his popular records, and snipes at "intellectuals" and "dissenters" (Simon & Shuster $7.95).

In JOHN GARFIELD: HIS LIFE AND FILMS, James N. Beaver, Jr. analyzes with deep understanding the actor's personality and the contradictions between his public image and his private life (Barnes $17.50). In "The Illustrated History of the Movies" series, aptly edited by Ted Sennett, two new volumes in their usual succinct, factual, well written and illustrated format, JOHN GARFIELD by George Morris and JEANETTE MACDONALD by Lee Edward Stern (Harcourt Brace Jovanovich $2.50 ea.).

Adam Reilly's HAROLD LLOYD: "THE KING OF DAREDEVILS" offers an original and insightful study that re-evaluates Lloyd's movies in the perspective of the period and special circumstances of their filming, while contrasting contemporary opinions with currently held views (Macmillan $14.95/9.95).

Charles Higham's MARLENE is an extraordinarily perceptive biography of Dietrich, which skillfully balances the twin aspects of her life as a universal symbol of glamour and as a devoted mother and loyal friend. Facts are often blended with gossip in this candid and riveting book (Norton $9.95).

Informative studies of notable filmmakers have been issued by G. K. Hall: THE FILM CAREER OF BILLY WILDER by Steve Seidman ($15.), THE FILM CAREER OF BUSTER KEATON by George Wead and George Lellis ($15.) and THE FILM CAREER OF ALAIN ROBBE-GRILLET by William F. Van Wert ($18.). All three scholarly volumes offer concise biographies, critical surveys, filmographies with full credits, comments and synopses, annotated records of writing about each filmmaker, list of distributors, archival sources and indices.

The life of Oscar Hammerstein II, one of the foremost lyricists of our times, is meticulously and authentically narrated by Hugh Fordin in GETTING TO KNOW YOU, a well researched and sensitive biography of a gifted artist (Random House $15.). Composer-lyricist Sam Coslow surveys his achievements in COCKTAILS FOR TWO with a sense of humor and an engaging modesty despite the number of hit tunes and film scores (Arlington $11.95).

Unitarian minister Stephen Fritchman, who espoused many liberal causes, writes about his eventful life in HERETIC: A PARTISAN AUTOBIOGRAPHY, mentioning notably his vigorous support for The Hollywood Ten, early targets of the McCarthy witchhunts (Beacon $3.95). ■

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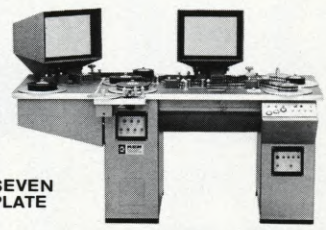

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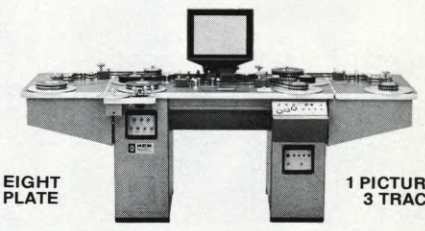

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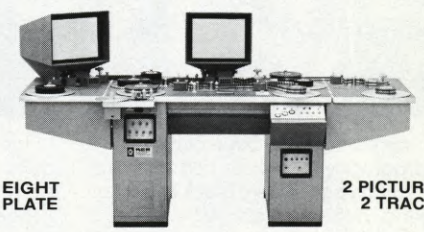

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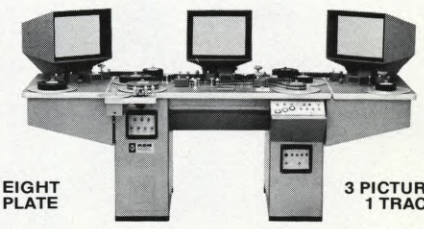

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BEHIND THE SCENES OF "JULIA"

In the hands of a group of totally dedicated, super-talented cinema artists, a fragmentary character study extracted from an autobiographical book becomes a superlative motion picture

Lillian Hellman's book *"Pentimento"* was published in 1974 and contained an incident detailing a profound, lifelong friendship between Lillian and Julia, two young women who, after drifting apart, were reunited by a tense and dangerous journey through Germany on the brink of World War II.

This story forms the basis of the Twentieth Century-Fox release, "JULIA", a Richard Roth presentation of a Fred Zinnemann Film starring Jane Fonda and Vanessa Redgrave. Also starring are Jason Robards, Hal Holbrook, Rosemary Murphy and Maximilian Schell as Johann. "JULIA" was directed by Fred Zinnemann and produced by Richard Roth. Alvin Sargent wrote the screenplay, and the music is by Georges Delerue.

Although the story is set in 1937 Europe against the background of the rise of Naziism, it is essentially a penetrating account of the affinity between Lillian and Julia, while including Lillian's close relationship with Dashiell Hammett—the American author and scriptwriter, played in the film by Jason Robards.

The story spans a period of over forty years in its telling: from when the girls first meet at school in 1918 to when Lillian reminisces in 1962 about both Julia and Hammett.

This time gap created additional problems for director Zinnemann and his crew during the preparation period of the production. Fashions and hairstyles changed radically during those four decades and there are at least four distinct variations of fashion throughout the film.

Following several weeks of extensive rehearsals, makeup and hair tests, and fittings for the many costumes, Zinnemann took his cast and crew to the Norfolk coast in the east of England where principal photography started with the brilliant cameraman Douglas Slocombe, BSC, as Director of Photography.

Winterton-on-Sea

A vast stretch of sand dunes overlooking the North Sea at Winterton, nine miles north of Great Yarmouth, was the site selected to represent Nantucket, off the coast of Cape Cod. The beach house where Lillian Hellman wrote *"The Children's Hour"*, coached by Dashiell Hammett, was reconstructed by production designer Gene Callahan as a perfect replica of a clapboard Cape Cod cottage.

Every morning, before filming began for the day on the thick sandy beach, a specially hired helicopter flew low over the well-trodden sand in front of the Beach House for 300 yards in each direction, clearing footprints and other marks in seven minutes flat. It would have taken a team of experienced props men almost half a morning to clear the same area.

Even before this daily operation, at the crack of dawn every morning, at least two hours before the Panavision camera rolled on the first scene of the day, director Fred Zinnemann slowly paced the deserted beach as he worked out all the shots required for the day's filming. At each selected point he marked the position by writing "long shot—FZ" or "medium shot—FZ" on the white screw-tops of empty jam jars and wedging them firmly in the sand.

"I like to be fully prepared for the complete day's work and can always go from a closeup to a long shot without wasting shooting time once the cameras roll," he said.

Gene Callahan had obviously made a thorough research of the differing weather conditions of the North Sea before constructing the beach house. On the second night of filming, a Force 8 on-shore gale sprang up unexpectedly and left the catering marquee in a heap of tattered shreds. The beach house, however, was undamaged with not a shingle or a clapboard out of place.

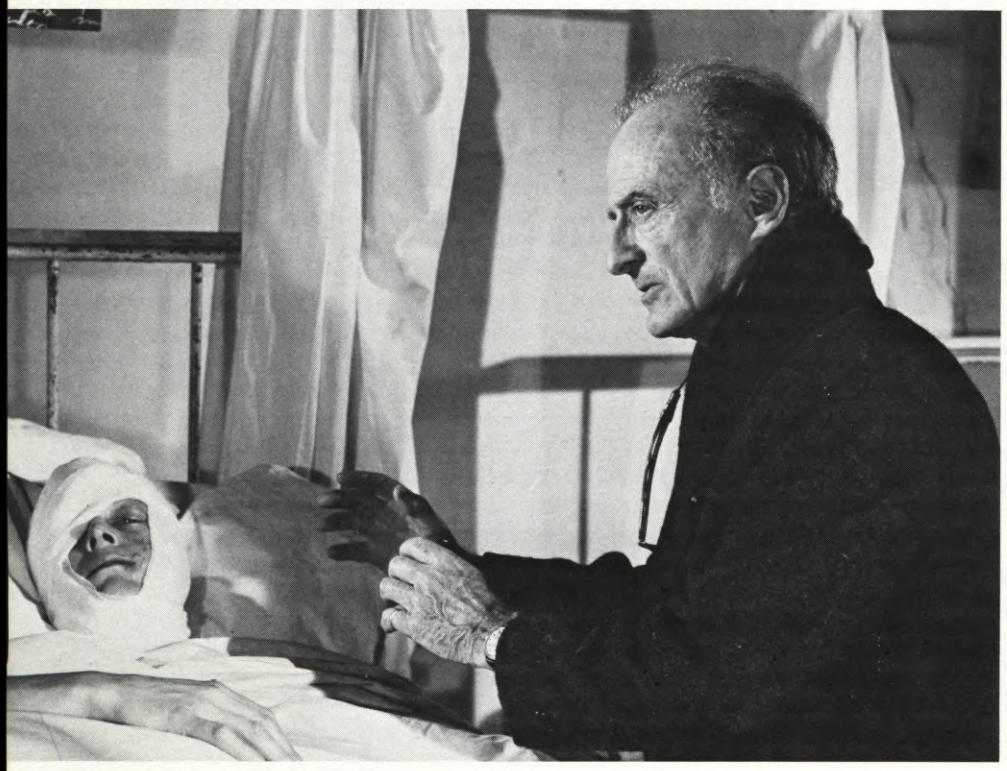
After five days' filming at Winterton—reclaimed from the sea several years ago and now a wild bird sanctuary—the cast and crew moved to Cumbria in the north of England.

The Lake District

Internationally famous for its lakes, hills and dense wooded areas, the Lake District of Cumbria covers a vast acreage in the north of England right up to the Scottish Border. The crew were housed in twelve hotels and guest houses at Keswick, on the shores of Lake Derwentwater, with production offices

Continued overleaf

Fred Zinnemann, two-time Academy Award-winning director of the current 20th Century-Fox release, "JULIA", is known throughout the motion picture industry as a meticulous craftsman of uncompromising artistic integrity. An unrelenting perfectionist, who constantly demands more than his colleagues feel they are capable of giving, he sets the example with hiw own behavior. The result? Invariably a superbly crafted and engrossing film entertainment.



(LEFT) Filming scenes for "JULIA" (somewhat precariously) aboard a small sailboat in the beautiful Lake District of Cumbria in the north of England. Although the narrative is set mainly in American locales, it was shot entirely in England and France, utilizing an international cast and crew. (RIGHT) Zinnemann prepares Academy Award-winning actress Jane Fonda for a scene in her characterization of playwright/authoress Lillian Hellman.

"JULIA" utilizes many interior sets, including the Moscow Theatre, a bakery, rooms in various hotels, Cafe Albert and three nightclubs: *Scheherazade, Le Boeuf sur le Toit* and *Harry's Bar.* All of these, as well as various interiors aboard trains, were built in sound stages of E.M.I. Elstree and Shepperton Studios in England, and in the Studios de Boulogne in Paris. Three production designers—one American, one English and one French—designed the sets.

(LEFT) On beachfront location at Winterton, on the North Sea coast of England, for the filming of sequences supposedly taking place on Nantucket Island, off the coast of Cape Cod. A typical New England beach cottage, with practical interiors, was built there for the filming. (RIGHT) Shooting outside the Hotel Meurice in Paris during the "magic hour", just after dusk.

based at the Keswick Hotel.

Both Jane and Vanessa underwent extensive training in the art of sailing for scenes shot on Derwentwater. In yellow slickers and gum boots, the two actresses were tutored in all aspects of sailing before Fred Zinnemann thought them proficient enough to handle the small sailing craft in front of the cameras.

Two weeks and filming was completed in the Lake District—on schedule despite inclement weather conditions—and Zinnemann moved on.

Oxford

In the early twenties, Lillian Hellman visited Julia at Oxford University in England. For this sequence, Zinnemann filmed Jane Fonda and Vanessa Redgrave in front of St. John's College, New College and the University Library at Oxford wearing clothes of the period—and even riding period bicycles.

Studio Interiors—England

Most of the interior scenes filmed in England were shot at the E.M.I. Studio at Elstree, north of London. The New York docks, however, were constructed on the mammoth silent stage at Shepperton Studios, west of London.

An exact replica of Sardi's restaurant was one of the major sets constructed at Elstree. Not Sardi's as it is now, but as it was in 1934—complete with identical caricatures around the walls and the exquisite costumes of the first night revelers. Jane Fonda, as Lillian Hellman, accompanied by Alan Campbell and Dorothy Parker (Hal Holbrook and Rosemary Murphy), dine at the restaurant to celebrate the successful opening of her first play, *"The Children's Hour"*. Even the table menus were authentic. The most expensive single dish on the list was a specially prepared steak—at $4.00.

Another major set represented the New York docks, where Julia departed for Oxford in the twenties. Lillian sailed to Europe in the thirties—and returned to New York during the same period.

Zinnemann managed to obtain the services of Captain Treasure Jones as technical adviser on these three liner sequences. Captain Jones, now retired, was the Master of the Queen Mary and, later, the Queen Elizabeth II. He achieved worldwide fame when he berthed the Mary at New York during a sea pilots' strike without the aid of a pilot or tugs. Even the tough New York dockers cheered as he successfully inched the giant liner into its berth.

After six weeks' filming in the United Kingdom, the company flew to Paris.

Paris

The beautiful and distinctive *Jardin des Tuileries,* alongside the Place de la Concorde, with the Louvre towering in the background, was the setting for the first day's location filming in France.

Director Zinnemann and his Anglo-French crew filmed Jane Fonda and Maximilian Schell in the all-important scene where the mysterious stranger brings Lillian a message from Julia asking her—a Jew—to smuggle $50,000 into Nazi Berlin during the tempestuous years just prior to the Second World War.

The famous *Gare du Nord* took on a new look for two nights when Zinnemann filmed Fonda, Schell, Hal Holbrook and Rosemary Murphy in the Paris Railway Station.

Set in 1937, the station forecourt boasted 30 functional automobiles of the period, 10 taxis, several trucks and a magnificent open-topped autobus—all privately owned. More than 200 costumed extras milled through the departure hall carrying period luggage and transforming it into a pre-war auditorium of nostalgia and outdated paraphernalia.

The ultra-modern *French Rapides and Expresses* gave way to a steam-powered 1922-built train for the duration of the filming here.

Filming also took place at the *Hotel Meurice,* where Lillian Hellman actually stayed during this period of her life and where they have a "Lillian Suite" to this very day: at the *Hôpital Villemin,* which represented the hospital in Vienna where Lillian visited Julia, injured during the infamous Florisdorf riots. Now closed, the Hôpital Villemin was built alongside the Gare de l'Est during the First World War so that seriously injured French soldiers could be taken straight from the train to the operating table: at the *Jardin du Palais Royal,* through which Lillian walks with Dottie Parker and Alan Campbell in the early hours of the morning after a particularly eventful night out: and at the preserved city of *Versailles,* where a reconstruction of the 1934 Paris riots was filmed in authentic detail.

Subsequently, Zinnemann took stars Jane Fonda and Vanessa Redgrave, together with his joint British and French crew, for two weeks of location filming at Strasbourg.

One of America's greatest actors, Jason Robards (shown here with Fred Zinnemann), essays the role of famed mystery novelist/scenarist Dashiell Hammett, who engaged in a 30-year romance with Lillian Hellman. True to his perfectionism, Zinnemann cast the best possible actors in the principal roles of "JULIA", and their performances are flawless.

Strasbourg

The seat of European Parliament, Strasbourg is situated about 350 miles due east of Paris in the Rhine Basin, 5 kilometers from the West German border. It has a population of 260,000 and a Cathedral (seen in the background of one scene) dating back to 1015. The main city of Alsace, Strasbourg is the burial place of General Kleber, Napoleon's leading general, and is also the

city where the French National Anthem, *"La Marseillaise",* was performed for the first time, having been written by Rouget de l'Isle, in 1792, when in the army and stationed in Strasbourg.

Strasbourg was selected to represent Austria and Berlin in the years leading up to World War II. The local railway terminus doubled for Berlin Station, and Shirmeck Station, about 40 miles west of Strasbourg, loaned itself as a German-controlled frontier checkpoint.

Hundreds of local extras were employed for the film, all costumed in the correct period of 1937 Europe—including the dreaded uniforms of the S.S., Nazi stormtroopers, German soldiers, Hitler Youth and the civilian "uniforms" of the Gestapo.

The train carrying Lillian Hellman on this dramatic journey had to be the right vintage. The production company was fortunate in hiring the only functional steam locomotive in France. The 230 G 353, built in 1922 by the French Railways and used on the Paris to Orleans route, is the only steam locomotive—apart from the one at the French Museum in Mulhouse—still in running order. It has not been used for commercial purposes since 1969 and now belongs to an enthusiastic group of locomotive lovers. Special permission was granted for it to be driven from Paris to Strasbourg. Weighing 68 tons with 1200 horsepower, it is still capable of 65 miles per hour. The necessary coaches, wagons and rolling stock were also obtained for the two weeks' filming.

The University of Strasbourg doubled for Vienna University where Julia became involved against the rise of Nazi-ism, and the suburban streets were used to film the Florisdorf riots where thousands of loyal Austrians were savagely dealt with by the growing power of the Third Reich.

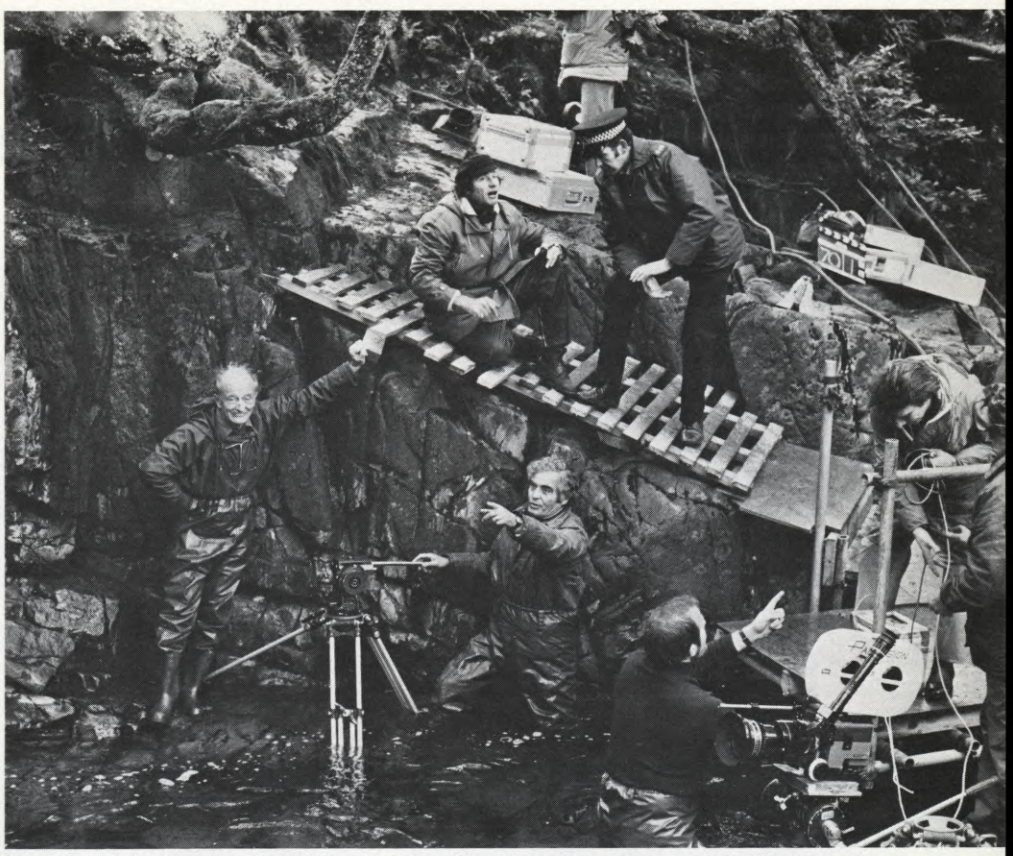
Upon completion of the Strasbourg sequences, the company returned to Paris to continue with interior filming.

Studio Interiors—France

During the filming in France, the production was based at the *Studios de Boulogne,* a small, intimate studio which boasts some of the most modern technical equipment in Europe.

All the studio interiors were filmed here, including important sequences in the train, the Moscow Theatre, the bakery, rooms in various hotels, Cafe Albert, and the three nightclubs: "Schéhérazade", "Le Boeuf sur le Toît", and "Harry's Bar".

After a schedule of seventeen weeks, principal photography for "JULIA" was completed. ■



The going sometimes got rough on location for "JULIA", as illustrated here. Zinnemann, though 70 years old, kept in trim by climbing mountains during the location filming, often exhausting his much younger cohorts. Filming was accomlished on a seventeen-week schedule.

A major sequence of the film was shot in the *Hopital Villemin* in Paris, dressed to represent the hospital in Vienna where Lillian Hellman visited Julia after she was injured in the infamous Florisdorf Riots. Now closed, the *Hopital Villemin* was built alongside the Gare de l'Est during World War I, so that seriously wounded French soldiers could be taken straight from the train to the operating table.

THE PHOTOGRAPHY OF "JULIA"

Famed British Director of Photography Douglas Slocombe, BSC, talks about the challenges, problems—and joys—of photographing this romantic suspense drama encompassing a period of four decades

By DAVID W. SAMUELSON

When I visited the United States recently, many of the knowledgeable Directors of Photography, and others whose opinions I respect, asked me if I had seen "JULIA", and went on to describe it as one of the most beautiful pictures made in years.

Soon after my return to the UK, I was invited to a private showing of the film prior to its London opening, and I thought it might be a good idea to ask the man who had created the images to accompany me.

Douglas Slocombe, BSC, the Director of Photography on "JULIA", replied that he had seen the picture four times in the previous two weeks—and perhaps 50 times altogether—but that he would be delighted to see it with me and then talk about it later.

One of my reactions to the screening was that "JULIA" must be everything that an aspiring Director of Photography would set his sights on, and yet, to Doug, one of the most modest and self-effacing men I have ever met, it is still far from perfect.

What was interesting, too, was the degree to which he could still become interested in the story as it unfolded. As he told me later, he is still noticing nuances in the directing, acting and editing of which, even after so many viewings, he had previously been unaware. His final remark to me was: "If you enjoyed it this time, see it again, and you will notice new things each time and reap more and more enjoyment."

According to the dictionary, the meaning of the word "*Pentimento*" (the title of the book by Lillian Hellman from which the screenplay for "JULIA" was developed) is "the reappearance, or visibility under x-ray, of forms that have been painted over in the alteration of a painting."

Similarly, there is more to "JULIA" than may be seen at the first viewing of its very beautiful surface.

In my interview with Doug Slocombe

Continued overleaf

(LEFT) "JULIA" director Fred Zinnemann discusses a scene with Vanessa Redgrave, who plays the title role in the film based on a segment of the autobiographical book *"Pentimento"*, by Lillian Hellman. (RIGHT) Zinnemann gives direction to Jane Fonda, playing the role of Miss Hellman. The noted Vienna-born American director, who won Academy Awards for his direction of "FROM HERE TO ETERNITY" and "A MAN FOR ALL SEASONS", numbers among his other achievements such distinguished films as "HIGH NOON", "THE NUN'S STORY" and "THE DAY OF THE JACKAL".

(BELOW) Although the bulk of interior filming in England was done at the E.M.I. Elstree Studios, it was necessary to use the vast "silent" stage at Shepperton Studios to construct the huge set representing the New York docks, from which Lillian Hellman sails to Europe. Although gaffers had originally estimated that it would take 60 Brute arcs to light the mammoth set, Slocombe had 12 Brutes and "about 40 10Ks" on the set and used only half of those for the actual shooting.

"JULIA" features three separate campfire sequences and Slocombe went to great lengths to make sure that each would have its own distinctive visual character. (LEFT) Jason Robards (as Dashiell Hammett) and Jane Fonda play a lyrical scene around the fire near their shared Beach cottage, supposedly at Nantucket, off the coast of Cape Cod, but actually filmed on a stretch of sand dunes overlooking the North Sea at Winterton, England. (RIGHT) Robards and Fonda share another fire during a camping trip.

The narrative line of "JULIA" utilizes numerous flashbacks, as the famed playwright/authoress recalls memories of her youth. (LEFT) The teenage Julia and Lillian dance with carefree abandon in the lush rooms of a Scottish castle belonging to Julia's grandparents. (RIGHT) In their early twenties, the two young women share confidences in front of a cheery fireplace. The film, based on true fact, manages to maintain a romantic aura, while building to a peak of almost Hitchcockian suspense.

Lighting cameraman Slocombe displays a wide range of versatility in his lighting of "JULIA", shifting visual moods fluidly as the story unfolds. (LEFT) The basic source light appears to be the single desk lamp in the Cape Cod cottage, as Lillian Hellman works on her first successful play, *"The Childrens' Hour"*. (RIGHT) For a sequence that takes place in a manorial dining room, Slocombe strove for complete simplicity—a long table with four occupied chairs, almost faceless attendants hovering in the background and the light coming from a couple of overhead lamps.

which follows, he discusses in detail, the special challenges, problems—and excitement—of photographing "JULIA":

QUESTION: During the course of your long career as a cinematographer, had you ever before worked with Fred Zinnemann, the director of "JULIA"?

SLOCOMBE: Not actually, although just prior to "JULIA", we had planned to work together on a completely different film, "THE FRENCH LIEUTENANT'S WOMAN", and had, in fact, gone down to Lyme Regis (the setting of the story) to examine possible settings. However, Zinnemann had casting problems on that project. He made tests for both the male and female leads, but had great difficulty in finding the right actors. It's a measure of his artistic honesty and integrity that, rather than do it badly, he decided to give up the whole project—which he did. Incidentally, I had read the novel, "THE FRENCH LIEUTENANT'S WOMAN", and loved it. I still hope that one day Fred Zinnemann will direct it and that I'll be lucky enough to photograph it. Anyway, a few months passed, during which I heard that he was preparing another subject, "JULIA", and, once again, I was asked to join him as his photographer. He gave me the book, "Pentimento", to read and I was very moved by it and very excited at the prospect of working on the film.

QUESTION: To what extent did your previous contact with him (on "THE FRENCH LIEUTENANT'S WOMAN") help in establishing rapport for the new project?

SLOCOMBE: Our reconnaissance trip to Lyme Regis had solidified my admiration for Fred Zinnemann, whose work, of course, I had known for years anyway, and I instinctively felt that I could do good work under his guidance. We got to know each other and found that we were on the same wave-length. We now went on a new reconnaissance to Paris, which pleased me immensely, since Paris used to be my old home. (I was, in fact, educated in France.) We also went to Norfolk and the Lake District in England.

QUESTION: How did you arrive at a photographic style for "JULIA"?

SLOCOMBE: Our photographic discussions on the second book were, in a way, carried on from those about the first book. Although the subjects were very different, they both had a certain romantic quality in terms of background, flashbacks and elements like that. Also, they both dealt with a sort of hard reality. Therefore, I feel that some of the lessons I learned from our discussions in the first instance actually did serve me in the second, as well. Zinnemann is very visually minded and he particularly wanted a feeling of realism in the picture. If anything was cruel, he wanted it to be cruel. If anything was romantic, he wanted it to be romantic. But he didn't want a soft, soppy sort of romance. He didn't want an embellishment of someone's memories, although he did respect the fact that people's memories tend to be of the nice things that happen in life, rather than the bad ones. I feel that he was happy to go along with a romantic image in that sense, but apart from that, I think he wanted things to be bold.

"JULIA" Director of Photography Douglas Slocombe, BSC is noted as one of the film industry's most versatile artists of the camera, his previous assignments having included such diverse projects as "JESUS CHRIST SUPERSTAR", "THE GREAT GATSBY", "TRAVELS WITH MY AUNT" and "ROLLERBALL", among many others. He credits a poor memory for preventing him from repeating effects he has created for previous films.

QUESTION: What was the nature of your working relationship during the actual filming?

SLOCOMBE: Zinnemann gave me complete freedom to do what I wanted to do, but at the same time, he actually was quite fearless in his criticism of me—which I respected—and anything he didn't like he was quite plain about. He also would suggest things very often, and I was very happy to go with that. I have found in the past, incidentally, that if one doesn't accept suggestions from people, one is often the loser. Ideas can come from anywhere and from the director best of all. I'm happy to take ideas from the clapper boy even or from an onlooker on the set. Nine times out of ten such ideas may not be interesting, but the tenth time often proves worthwhile. Zinnemann, of course, is actually a very creative man and he had many good ideas. In one beach scene, for example, he wanted Jane Fonda's voice (as that of Lillian Hellman) to come out of nowhere, for her to suddenly disappear out of the firelight into absolutely nothing. Now, one might have been tempted to give her a slight silhouette effect, but he suggested that it would be very nice to have the voice come out of complete blackness, and I went along with that. I thought it was a marvelous idea actually. He had a lot of creative ideas like that, but having voiced one, he would leave me alone for weeks and then suddenly come up with another idea that would be very exciting.

QUESTION: Can you tell me something about the locations that were used for the filming?

SLOCOMBE: The filming was divided into two sections. We did one half in England, including the scenes that represented England itself, as well as scenes that really should have been shot in America. Scenes that ought to have been shot in the Adirondack Mountains, for example, were actually shot in the Lake District in England, which has simi-

lar terrain. A beach area that was supposed to be on Long Island Sound was actually shot in Norfolk, on the East coast of England. A beach house was built there on the edge of the sea and we shot a lot of real interiors as well as exteriors there during the few weeks that the beach house was up. One of my favorite scenes that we shot there did not, unfortunately, end up in the picture. It was quite a complicated scene which began inside the beach house, shooting out through a window toward a full exterior that brought Jane Fonda into the house and then panned and tracked her right through the house to the other side, where Jason Robards appeared. Then it picked up bits of the seaside before going right around the house to the beginning again. It was physically a good shot which represented a lot of hard work and imagination, but, as I've said, for various reasons it was cut out of the picture. Like most cameramen, I hated to see it go. But on the other hand, having said that, a lot of good things remained.

QUESTION: Where did you film the other half of the picture?

SLOCOMBE: The other half we shot in France and the interesting thing was that the filming unit was divided into two nationalities there. Zinnemann had, on "THE DAY OF THE JACKAL", already used French crews to a great extent and he decided that on this picture he would once again try using in each country the people whom he felt could work best in their natural surroundings. In fact, the only people to leave England were the camera crew, the sound crew, the makeup artist and the continuity girl. But apart from that, we had in France a French gaffer, French electricians and French grips. All the normal floor aides were French, as were the special effects technicians, the assistant director and the production manager. Even the second unit was entirely French.

QUESTION: I trust you had no language difficulties in this case?

SLOCOMBE: No, it didn't worry me, because, as I said earlier, I was educated in France and I rather enjoyed using the language again. I felt very much at home with these technicians anyway. These days one gets more and more used to working with people of different nationalities. On "JESUS CHRIST SUPERSTAR" most of our floor personnel were Israelis, and on "TRAVELS WITH MY AUNT", which we shot mostly in Madrid, we used a largely Spanish crew and Spanish laboratories. "ROLLERBALL" was shot partly in Munich and partly in London, and in Munich we used German technicians and a German laboratory (at Bavaria Studios). On the other hand, for the sequences shot in London, we used Pinewood Studios and the Technicolor lab. On "CARAVANS", which has just completed shooting in Iran, I had my own faithful camera crew from England and a number of English floor personnel, as well as Americans. Nevertheless, we had a very large local Iranian contingent, mostly from the documentary field in Tehran. We all worked together very well, although in this case I didn't speak the language. The interesting thing about our work is that the film language seems to be almost international, and I find that people of most nationalities seem automatically to understand what is needed, simply by means of sign language.

QUESTION: One of the things that particularly impressed me concerning your photography of "JULIA" was the depth of black which you achieved. Would you care to comment on that?

SLOCOMBE: Well, to tell you the truth, I've never been frightened of black. I remember that years ago, in the three-strip days of Technicolor, one was told to light fairly flat, never to have a contrast ratio of more than three-to-one and, if possible, never even to exceed one-and-a-half-to-one or two-to-one. I felt this approach was quite wrong and I was quite fearless in using ratios of ten-to-one or more. I discovered for myself the excitement of black. I found that adding black and white to the color range suddenly gave one an extra dimension of which I hadn't been conscious before, and I've always retained that excitement for black. In the right scenes, I like to leave whole areas of the screen completely unlit—without any fill light whatsoever. Admittedly, some subjects allow one to do this more than others, but for "JULIA", I felt that, on the whole, one could have a fairly large range. A lot of the picture is basically low key. The railway sequences are low key. The locations are nearly all low key—with variations, of course. A lot of the scenes are quite moody.

QUESTION: Could you tell me about the filming of some of those marvelous beach sequences that are in the picture—especially the ones where the people are sitting by the fire?

SLOCOMBE: Most of that was shot at turn of day—which offers a very short time in which to do it—but it was an in-

Continued on Page 280

Slocombe (left), holding a small quartz fill light in his hand, waits for the operator to reload the Panaflex camera prior to filming the two women sailing a small boat. Cramped quarters were obviously the order of the day. The two actresses took extensive training in the techniques of sailing small craft, prior to being turned loose alone in this sailboat for long shots.

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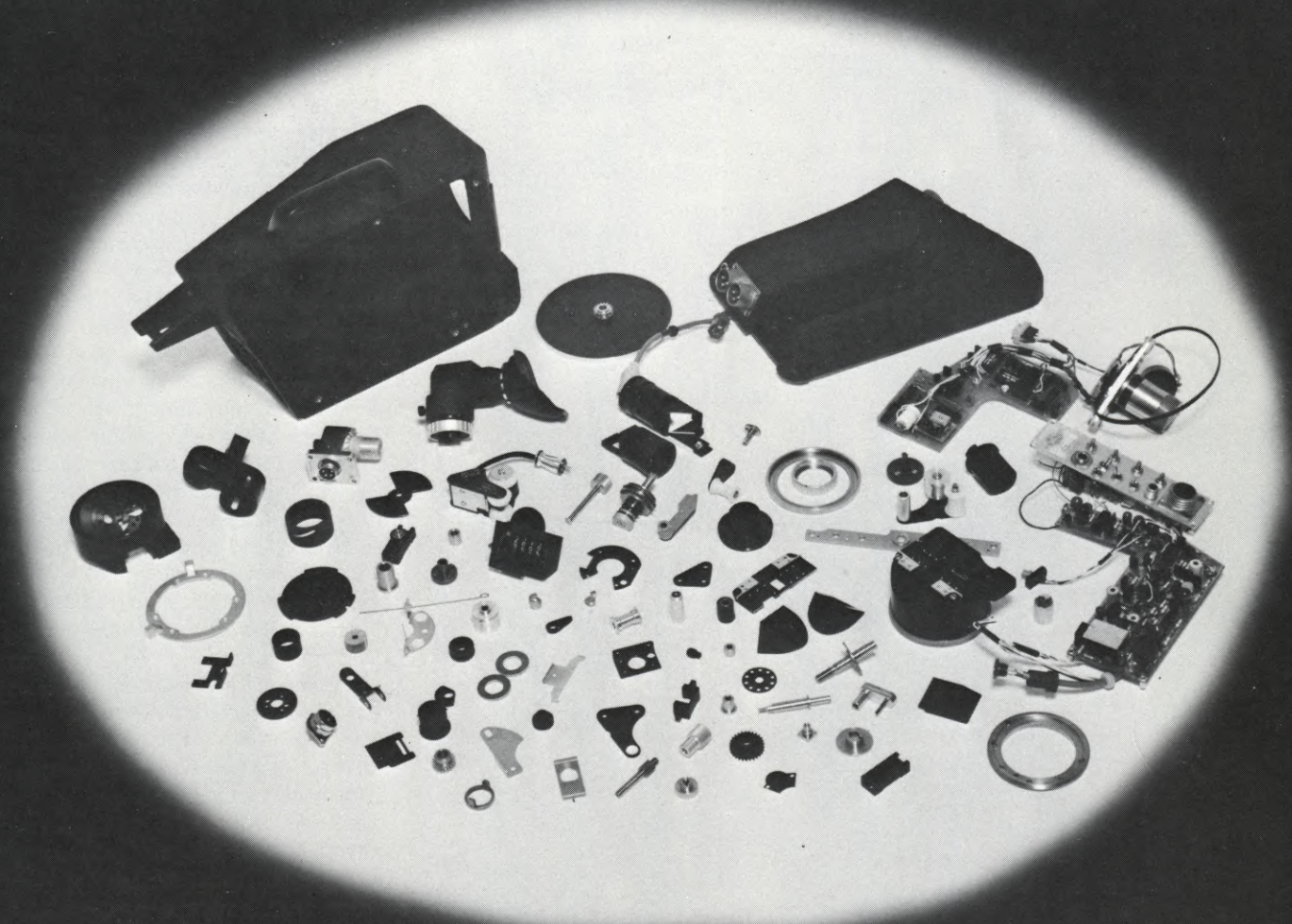

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THE SUBJECTIVE CAMERA AS LEADING CHARACTER

A bold decision—to let the lens of the camera function as the "eyes" of the protagonist throughout the entire film—presented a formidable challenge, but created an exciting effect on the screen

By JIM BECKET

To make a film entirely with a subjective camera—that is to show on the screen only what the camera/protagonist sees—has no doubt crossed the mind of every filmmaker. However, the idea is usually quickly dismissed as too limiting and somehow sophomoric. The one well-known feature attempt, "LADY IN THE LAKE" of 1946, has limped into film anthologies as a curiosity rather than as an artistic or commercial milestone.

Two factors, however, led me to try it. The first was that the United Nations High Commissioner for Refugees (UNHCR), for whom the film was being made, had good political reasons not to show the refugee protagonist. As the UNHCR is a humanitarian organization of the UN, it cannot criticize any member state, so to show on the screen an individual of a specific type and accent risked singling out one particular country for criticism. This was especially sensitive, since the script called for a political refugee who had been brutally tortured in his own country before fleeing. As the film was shot in Geneva, an international centre, we were able to find there and in Europe a mix of actors and extras which made the "country of asylum" totally unidentifiable.

As part of a chase sequence for "I AM A REFUGEE", during the course of which he had first run one hundred yards down a cobblestoned street and "avoided capture at a side street", Steadicam operator Jerry Dunkley prepares to race up a flight of sixty-five stairs, before darting into a darkened doorway. After four takes of this protracted scene, he was a bit worse for wear.

The second factor was the advent of the STEADICAM. As a loyal reader of *American Cinematographer* I was aware of this "exciting and challenging new tool for the creative cinematographer." A freedom of movement potentially able to correspond to human movement seemed to open up new possibilities for conveying subjectivity. As distinct from the geometric exactitude of camera movement on tripods and dollies when the camera is "unobtrusive", I hoped that the STEADICAM would produce a natural flowing movement which would give a different "feel" on the screen and would be positively "obtrusive" in that it was the principal character.

Rather perversely, I maximized the challenge by establishing the most restrictive conventions or rules for subjectivity. First of all, total subjectivity was to be respected. This basic restriction surrenders at one stroke perhaps the strongest card in the filmmaker's hand—audience identification with the hero on the screen. After some experimentation, we found that subjectivity was reinforced by introducing, when natural, the hands of the refugee into frame, as well as his feet when his gaze would take them in. The face of the refugee is seen for one instant when his torturer thrusts his beaten and bloodied face before a mirror which he smashes with his hand, only to confront his shattered and fragmented image in the shards of broken glass on the floor.

The second rule established was that real time would be respected; there would be no cuts. This, of course, was not really feasible, nor necessarily desirable, if only for the reason that we had to break for lunch. "Real time" was preserved, and cuts made, principally by inserting memory sequences—what appears in his "mind's eye"—though we also resorted to such devices as him putting his hands over his eyes in moments of fatigue or exasperation, moving him and out of pitch black spaces ("I'm sorry the light bulb's burned out here in the

corridor."), or cutting off the dark back of someone he is following through a doorway.

The mirror scene where the horror-stricken character thrusts his hands over his eyes proved a real technical conundrum in coordinating the two pairs of hands (those of the actor and those in front of the lens) and avoiding the unrealistic camera angle required to keep the camera's reflection out of frame. The solution was found with the camera directly across from the refugee who stared at the lens; this produced an upside-down image that came out right when the double-perf film was laid in tails first.

Not cutting within a "real" sequence was a severe limitation, especially for the actors, who had to give flawless performances, and it pointed out the difference between how we see and cinema grammar. Panning illustrates well the difference. Moving from one object to another over, say 45°, is achieved by the eye in a split second, with no meaning beyond the act, while the camera must either slowly pan or swish pan, both of which on the screen become laden with dramatic significance.

Another choice that had to be made in terms of convention was lens size. We excluded the use of a zoom as an obvious photographic device contrary to our visual experience and worked imperceptibly within a range of 10mm to 16mm. A 10mm lens was generally the most effective for subjectivity, as it maximized the visual field without reaching the point of distortion. However, in the crucial courtroom sequence, which lasts almost half the film and is limited to one static view with some characters more than 20 feet from camera, we did change lenses between a 10mm and a 25mm, but rearranged the set to give the same perspective, the same look to the sequence.

Another convention that we had to adopt which did violence to our normal cinema experience was that the actors had to look directly at the lens/eyes. The spectator is conditioned to interpreting this as being directed to him, as in a news programme or as a *clin d'oeil* in theatrical films. In normal documentary interviews or feature films one is careful to keep the eye line away from the camera, but here, of course, the point was to seek a new identification of spectator/protagonist.

Finally I opted to shoot in black and white for present reality and color for memory. This inversion of what is customarily past and present was psychologically justifiable, in that the present for the refugee is alienating and forbidding, while the past remains the most vivid and actual for him. Using both stocks also served to distinguish what was "now" and what was "memory". An important choice had to be made at the start and that was whether or not to play it safe and shoot entirely in color and then print in black and white if we still considered that the most effective. I was not ready to sacrifice a future generation, so to speak, and went ahead and shot in black and white.

"I AM A REFUGEE", sponsored by the United Nations High Commissioner for Refugees, was not intended as a horror film, but some quick cuts of torture were necessary in order to establish the protagonist's past. In this rather bizarre-looking set-up, cameraman Witold Lesniewicz swings the camera in the same rhythm as the swinging body in order to convey the effect of subjectivity.

The STEADICAM was put to the test right from the first day of shooting, which called for the refugee to turn on the light in the foyer of a rundown apartment house, look up five floors, and then climb, exhausted, three floors, knock on two doors, "talk", and finally enter a third apartment only to "pass out". This four-minute sequence, with a constantly mobile panning camera, presented Director of Photography, Jack ("THE BIGGER SPLASH") Hazan with a number of lighting challenges. Not only did the five-floor stairwell, two apartments, and foyer of this abandoned building have to be lit for the one shot, but lights and wires had to be skillfully hidden from the wide-ranging pans of the STEADICAM. In this situation the STEADICAM was really in its element: climbing smoothly up the stairs, keeping the 850-watt quartz lamps on polecats out of frame, then, on the third floor,

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AN AMERICAN FILM INSTITUTE SEMINAR WITH RALPH WOOLSEY, ASC

PART II

A sharing of experience with an Emmy Award-winning cinematographer who discusses techniques involved in filming a classic American play

(EDITOR'S NOTE: What follows is the concluding portion of a seminar held for Fellows of the American Film Institute [West] and featuring as special guest noted cinematographer Ralph Woolsey, ASC. The seminar was preceded by a screening of the American Film Theater production of "THE ICEMAN COMETH" on which Mr. Woolsey served as Director of Photography.)

QUESTION: Why do you think Technicolor eliminated I.B. printing?

WOOLSEY: I'm sure it was a matter of economics. As you can appreciate, quality control can be a big problem. They had to make three printing matrices from the original negatives, with the advantages of a final first-generation print. Technicolor made these three positive matrices right off the original negatives, and made as many sets as were needed, because they could only print maybe a hundred prints per set before they wore out. The matrices were soaked in the subtractive dyes—yellow, cyan and magenta. Then they were transferred one by one onto this blank film, which sometimes had the aperture masks already on it. (The sound track was put on separately, I believe.) They held fantastic register with a metal belt with pins that exactly fit the sprocket holes. The blank film was first laid on there. As it came past matrix A, the dye was transferred off. The matrix then went to get another batch of dye for later use. All three ran one after the other and were transferred in perfect register and sync and they ran at a prodigious rate of speed. The mere fact that Technicolor was able to do this is quite a tribute to their engineering. And they did it for years. They even improved it. When wide-screen pictures came out, people said, "They'll never hold the register." But they did. Somehow they managed to keep it going. I believe their quality control began to be more costly, because they had to constantly keep repairing these pin belts. They had special machinists that checked them and did the repair work on them, and it took technicians who understood it. I guess it was just a pain in the ass all the way around. It certainly cost a lot of money.

COMMENT: The reason they don't do it anymore is that it's only economical to do that when they're making several hundred prints. That's why the Chinese bought it. When they make a picture, they are assured of its playing in a thousand theaters. So they need a thousand prints.

WOOLSEY: That's very likely true, because it was the cheapest way to make prints. It still amazes me when I see some of the old pictures as to how well they've held up. "THE ICEMAN" was one of the very last pictures printed by that process, which undoubtedly accounts for some of the color shifting that troubled us.

COMMENT: The story I was told about why they stopped doing it, whether it's true or not, was that it was time to overhaul the machine. They decided the economics of all the money they'd have to put into the machine, compared to how much they were getting out of it, was not worth it.

WOOLSEY: Economics has a lot to do with the releasing of pictures. In fact, at the session recently held at the A.S.C. that I alluded to before, we had technical people from each of the labs in town. The subject under discussion was one-light-printed dailies, and release print quality, and all that. The matter came up about the guy who pays the bill. After all the various arguments and objections and the bitching had been heard, one lab man referred to a picture shot in an area where there was a lot of snow. Apparently the daily prints were on the magenta side and the producer loved it. When he saw the first answer print he said, "That's just terrible. I want that purple, that pink snow." By God, he insisted on it and the prints were all made with pink or magenta snow. Nobody else could prevail. They tried their best to talk him out of it, but he loved it. (The shadows in snow scenes often go in that direction anyway, but I'm sure most of us would prefer them to be neutral.) This is what you're sometimes up against—you may have a trial print where you say, "That's just marvelous—exactly the way I'd like to have it released." But another opinion may be involved. Conrad Hall took a lot of time to get the print of "DAY OF THE LOCUST" the way he liked it; nice gold effects and all. It was sent over to John Schlesinger in London and he didn't like it, saying, in effect, "It's much too gold. I want it colder." And according to what Connie said, there was some discussion back and forth in arriving at a compromise. I don't know whether what you saw on the screen was more blue the way Schlesinger liked it, but they got together on a beautiful result. Hitchcock likes to see his shadows neutral. This is the sort of feeling I have, unless there's really a special effect in mind. Whether you're going for, let's say, a sunset effect where you want a golden look, or whatever the tint is, I think sticking to neutral shadows is not a bad idea. You can always add colored light to the scene if you desire. I recently did a scene as a specific example of this. It's supposed to be sunset, and a man yells out the window at his neighbor who's in an adjoining house. To sell the idea of sunset, I used a kind of gold filter on the light coming through the window. Now the lab could very easily just print that out—their tendency is to make faces look normal. How are you going to circumvent them; to keep them from screwing up your effect? Historically I can go back and tell you how it was done "in the old days." They used to shoot what was called a "Lily," which was a color chart and a gray scale, plus a three-sided device with tones of gray. At the end of every "print take" in three-strip Technicolor and even later, this so-called Lily was photographed in the same light. This provided in most scenes an angle on the shadow side and another on the brighter side, plus one straight at the camera. In that very-well-engineered Technicolor structure, certain limits were urged strongly. A given key light required a specified fill light and so on. (Hopefully they tried to get you to do that.) The lab could tell from the Lily by reading with a densitometer how the negatives were balanced and exposed. If there was excess red, they would correct it in making the print; they had an accurate guide. If you wanted to fool the lab and use colored light, or a filter on the camera, you went ahead and shot it—but the Lily was done in white light, because that was the basis for printing. A story once came out about fooling the lab in London when a company was shooting in Ireland. Evidently the mailboxes in Ireland are green instead of red, as they are in England. The crew had one of the actors made up with a green face; then they altered all the colors on the Lily. They photographed this guy standing by the green mailbox, which looks exactly like an English mailbox, with the phony

Lily, and the lab went crazy trying to correct it.

QUESTION: If the "Lily" is no longer used, how do they judge the color cast now?

WOOLSEY: We later used just a white card or a gray card, like the Eastman 18 percent gray card. That happened when we went to negative color, because the laboratories were not used to evaluating a color negative. As they developed more expertise, and when they got into electronic scanners like the Hazeltine and other devices, they were able to judge it much better. A really experienced timer can just look at the color negative and he can tell you right off whether it's too green or pink or whatever. In any case, to circumvent them from changing a scene where you use colored light you may have to put some white light in for color contrast. I filled the bedroom mentioned earlier with a low level of white light; then through the window came my sunset color effect. It's best to write a note on the camera report warning the lab, and you should call your lab contact man if there is any unusual concern. If your instructions are ignored, a reprint may be possible; otherwise, your only chance to get the effect is when you're timing the final print. Viewing the work print is a good idea, as you can tell the timer what you're really after. For instance, "It's very late in the day. You can see the long shadows when we managed to shoot it, and we like this sunset color in the work print." When he knows this, he will work in that direction.

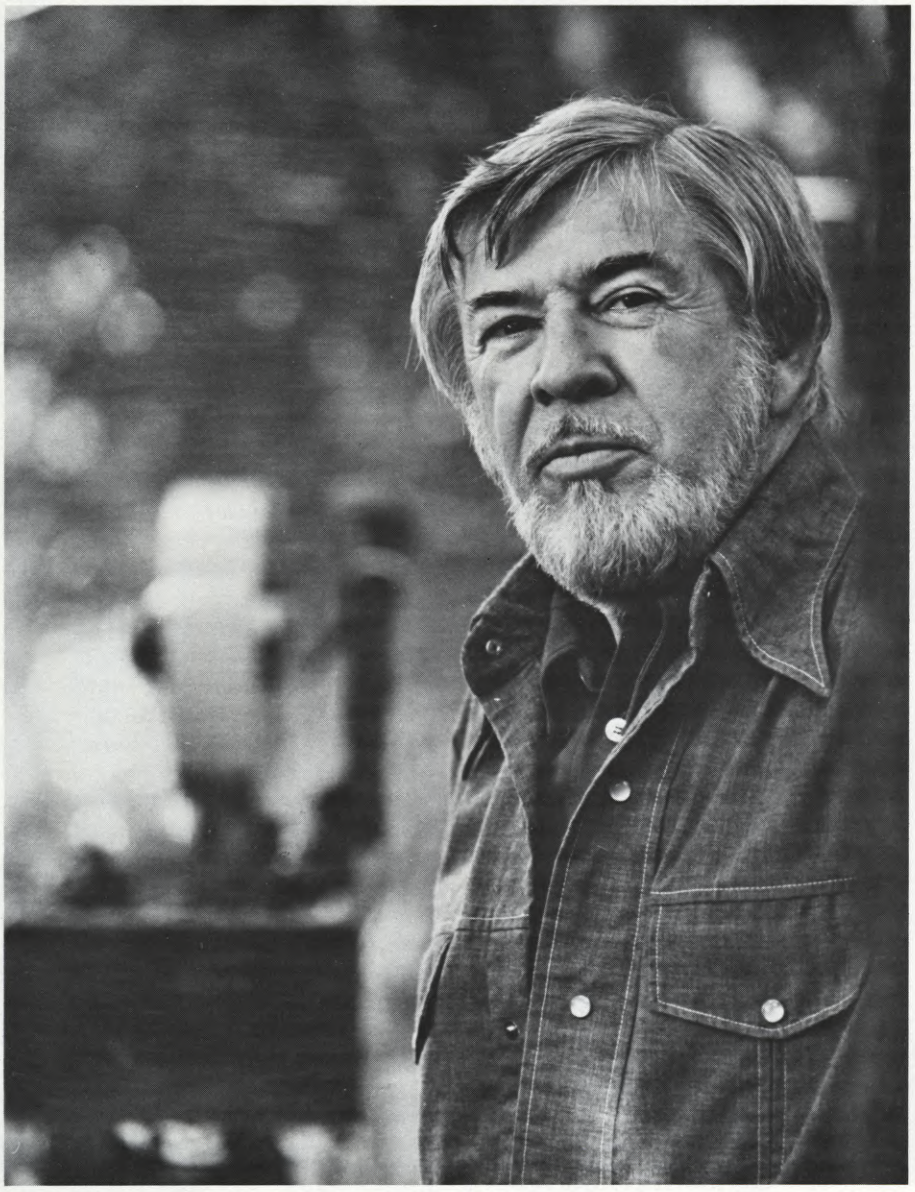
QUESTION: Lately in a number of films, I've noticed what's either an effect or a color balance problem with windows. It seems as though either the windows aren't being filtered to correct the color temperature to the interiors at 3200, or they're being filtered and it's not quite enough. I was wondering if you had noticed that. It seems to me that just in the last few years the trend has been to not worry so much about blue light from the window. Is that more of the accepted thing now—to let that go blue?

WOOLSEY: You're very observant. That's one of my pet peeves, as a matter of fact. It is an accumulative thing. It may be part of a stylistic change—I don't really know. For a while, coming out of commercials, there was a trend to go into the so-called hot or blooming window or the flared-out window. In "FAT CITY", for instance Connie Hall put white objects outside and deliberately made them flare, but it was for a very valid purpose. It was also done a lot in "DOWNHILL RACER", where I thought it was O.K., because often there was nothing outside but snow or high-key areas. The art director deliberately may give you nothing but a gray or white backing if he feels that everything is hot outside—just a glare. If you use flare-type fog filters on the camera while shooting into a window like that, you'll get a nice, greasy flared vaseline look over all bright areas. Certain other fog filters won't do that, and some of us are more partial to them, so that if a person walks through a hot street, his white shirt or white cap isn't going to have a halo traveling with it. Light bulbs won't have that halo either when shooting at night.

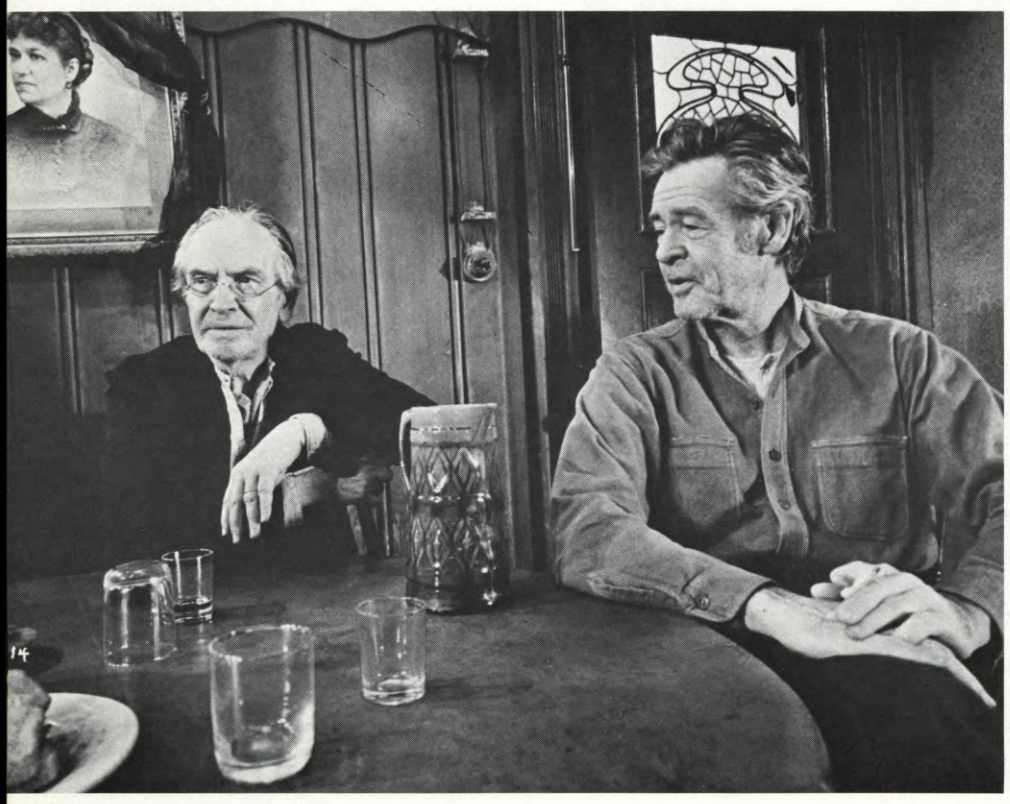
QUESTION: But is that flared look of the windows always a stylistic choice for "artistic" effect, or is there sometimes another reason?

WOOLSEY: The reason for that interior/exterior imbalance, I believe, is twofold. Either it takes too long to achieve good balance and costs too much money (so it isn't done at all) or it's done inadequately. Many times you can get away with an imbalance and nobody will care, especially if there's enough action inside that's important. But if it becomes a point of distraction, it's wrong. Or if you must see some action outside the window, then you certainly ought to balance to it. Maybe you like it hotter outside—I would go along with that. Then if you're going to dolly up to the window, when you get there you would have changed the exposure so the exterior is normal. Until you got there, you could let it be hot. Certainly, if the exterior has any signifi-

Ralph Woolsey, ASC, besides being one of Hollywood's busiest Directors of Photography, does a great deal of lecturing and teaching before groups of young film-makers. Among the most articulate of those engaged in his art, he can discuss its many technical facets in the most precise detail, as evidenced by the transcript of the seminar presented in these pages.



Shown on these pages are scenes from the American Film Theater production of Eugene O'Neill's "THE ICEMAN COMETH", Directed by John Frankenheimer and photographed by Ralph Woolsey, ASC. The film starred Lee Marvin, the late Fredric March, Jeff Bridges and the late Robert Tyan. In photographing what was essentially a stage play, Woolsey was faced with two major chanllenges: that of desaturating the color (in keeping with the vehicle's somber theme), and that of rendering the visualization of the action in cinematic terms — that is, fluid, rather than static. He succeeded notably in both respects.



cant action, I believe it is incumbent on the cinematographer to hold a reasonable balance. Perhaps a stop hot outside, let's say. That is a ratio that's been used by many colleagues whose work I dig.

QUESTION: What kinds of gels or other materials do you use to achieve a proper interior/exterior balance in such cases?

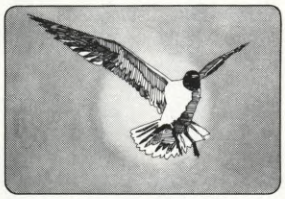
WOOLSEY: We've been using various types of materials in order to control either the color or the intensity outside—either a material which would balance the light to the 3200 inside, or a neutral density material which would have less transmission; one stop, two stops or a combination thereof. After determining how hot it is outside, you know it's eight times, ten times, 12 times or whatever it is, brighter outside *than you can light* inside. *Then you figure how much neutral you need. If you want to use incandescent light, a light-balancing color must be combined with the N.D. Sad to say, the materials have been becoming more impure. Some of us have had frustrating experiences with the so-called neutral solid stuff made out of a plastic (like plexiglass). I was doing a picture called "MOTHER, JUGS AND SPEED" where we had a location with a lot of work involving daytime action outside-to-inside, and we ordered many panels of N.D. at $100 apiece per four-by-eight. For varying conditions they were put on in layers, like a .60 neutral with a .30. We lit the inside with daylight-quality light, because there were many entrances and exits, people opening doors and swinging windows. It wasn't practical to use an 85 correction on the windows. When I saw the first day's dailies, everything outside had a green tint to it. The areas inside were fine in the corrected tungsten light. The next day I started investigating the N.D. with my color-analyzing meter, and found that it had a green tint. It wasn't neutral at all—but had a .20 green density. When you added two layers of it together you got double the green tint, and that really looked weird outside. The N.D. that came in rolls seemed to be pretty good, but the heavy sheets were off. The following day we found that some of our material used for balancing tungsten light to daylight was off. This included some so-called Macbeth filters as well as "Tough Blue 50" material made for use over the lights. We used to have a "shower-curtain" material called "velon" or "velveteen." It was pure white; when put in front of a light, it didn't color the illumination. Spun glass is the only diffusion medium I know that hasn't*

changed from pure white. The newer soft frost has progressively become more yellow, in my opinion. Hang a piece of this stuff in front of a light, and the Kelvin drops considerably; if it's daylight the C.T. drops at least 500 degrees. This may account for some of the change toward a bluer look outside. Only yesterday I read some of these neutrals used on the windows of an ambulance in which we were making travel shots. On the rear windows we had the plexiglass stuff. On the side, curved windows it was an equivalent density in the flexible material. By eye you could see that one of them was warm and one was cold, so I checked them out and, sure enough, the solid stuff was on the green side. I heard two cinematographers complain about the same problem, when they went on locations with truck loads of this neutral density. (It comes with a peel paper on each side, which must be removed very carefully; then the sheets must be polished.) They mounted the N.D. on windows two layers deep; then looked through what seemed like the Amazon—it was that green. What are you to do? Perhaps $2000 of the studio's money went for this stuff and you had no way to check it beforehand. Now you must use it. In many cases correction material that claims to raise the color temperature of tungsten light to daylight is not doing it. For instance, "Tough Blue 50" theoretically raises 3200 degree light to 5000—but it doesn't. You might as well face it—you're lucky to get 4500 out of it, because the stuff isn't as blue as it should be. The old Macbeth filters will do it, but they absorb about two-thirds of the light. So Mole-Richardson and others are now marketing a lighter material, which they call "daylight", but it falls short by several hundred degrees. Dichroic filters on lights don't bring them up to daylight either. Daylight is at least 5200 degrees, if you want to come near a standard. In a roundabout way I've finally arrived at the source of many of these situations where the exterior color is so blue. There's been a big trend in soft-lighting, especially for daylight. It's natural. So you hang soft frost in front of your lights. It knocks your color temperature down. English cameramen for a long time have been using on their windows a filter which is about half of the 85. They like it colder outside, perhaps motivated by their own geographic habitat, where they are used to seeing it bluer outside. On interiors when I have to use daylight-quality light which reads too warm, I use less than an 85 in the camera and it comes out fine. Any area that shows the outside will be colder than

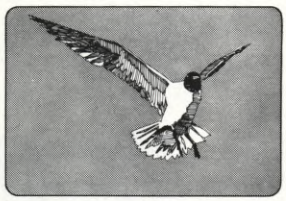
Continued on Page 278

This hand-holdable telephoto lens virtually eliminates the mirror lens "hot-spot" in both still and ciné photography.

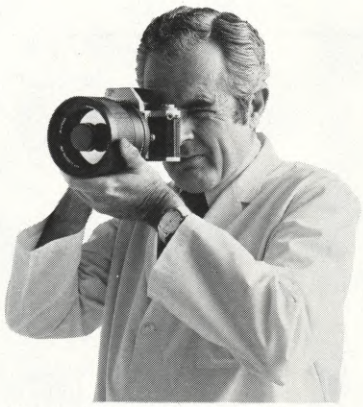
Mirror lenses allow the use of long effective focal lengths without the extreme length and bulk of refractive lenses. But the bane of the mirror lens has been the troublesome "hot-spot"; uneveness of illumination from center to edge of a full f-stop or more as simulated below.



Typical reflex—lens hot-spot.



Vivitar solid CAT reflex lens.



The optical design of the Vivitar Series 1 600mm f8 solid catadioptric lens virtually eliminates the "hot-spot." The fall-off in illumination from center to edge is one-third of an f-stop or less.

In addition to solving the "hot-spot" problem, the Vivitar 600mm CAT is an exceptionally durable and stable lens. Spherical elements are combined to form what is a virtually solid element, thus eliminating the large air spaces and low tolerance to shock and temperature changes found in conventional mirror lenses. In fact, the primary element is 42.7mm thick.

At 100 yards the Vivitar 600mm CAT produces the same image on the 35mm format that a 50mm lens produces at 25 feet. An experienced photographer can hand-hold this compact lens at shutter speeds that would normally be impossible with a 600mm refractor type lens.

The lens is fully compatible with popular 35mm SLR cameras and is also a spectacular optic for 16mm ciné cameras accepting "C" mount adapters. The image produced on 16mm film is approximately equivalent to the image of a 2000mm lens on 35mm still film.

Like all mirror lenses the Vivitar 600mm telephoto lens has a fixed aperture. Exposure is controlled with shutter speeds and the use of neutral density filters supplied with the lens.

Vivitar's 600mm solid CAT is no futuristic pipe dream. It is in production and available now at Vivitar dealers.

Specifications: Focal length: 600mm. Aperture range: f8 (fixed f-stop). Construction: 9 elements, 7 groups. Angle of acceptance: 4° Weight: 1.36kg (3 lbs.). Length: 8.4cm (4 3/16 in.). Diameter: 10.6cm (4 3/16 in.). Accessory size: 35.5mm at the rear of the lens, inside the T-mount. Filters included are Series 1 VMC close tolerance UV haze, K2, 4X ND, and 25A.

Closest focusing distance from film plane: 7 meters (23 feet). Screw-in hood, detachable tripod socket, filters, lens case, front and rear lens caps included. Mounts available to fit **Nikon, Canon, Minolta, Konica, Olympus OM, Pentax,** and universal thread mount cameras.

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actual size

Vivitar® Series 1™ 600mm f8 solid catadioptric lens.

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Here's all you need to know about prestige processing.

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RECORDING SOUND TRACKS FOR ADVENTURE FILMS

By ARTHUR CHESTERMAN
Film Sound Supervisor
British Broadcasting Corporation

Recording original sync sound under difficult and often hazardous conditions—including a climb of Mount Everest—requires special considerations completely different from those of a normal situation

For some years now, adventure films have been made entirely on location using actuality situations, as opposed to faking them in a studio. This has created considerable problems when conditions have been extreme, and by extreme I mean temperatures of −40°C rising to 50°C; water up to your neck in total darkness; perching on a narrow ledge with a sheer drop of several thousand feet; blizzards raging.

It has been argued that once the pictures have been obtained, then the sound track can always be post-synced and effects created in the dubbing theatre. This is a dated and outmoded way of making a film because even the finest actor cannot re-create in a warm theatre the brittleness in his voice when it was so cold it hurt to talk, or he was so terrified that the adrenalin running through his veins gave a performance unrepeatable once that particular moment was over. And while all this is happening, the film crew have to be in control of the situation to the extent that they can capture the realism and atmosphere.

I think the sound track in this kind of location creates far more atmosphere than the picture, because it brings across the tension and immediacy of the moment. Snow scenes in bright sunlight always look like advertisements for ski resorts, even if it is bitterly cold. I would like to discuss some of the problems that can present themselves on very tough assignments and will take three films of different natures to illustrate them. But before I come to specific films, I want to talk about people and equipment.

The first priority for any assignment that is likely to be tough and dangerous must be the fitness of the person, both physically and mentally. Physically, because of the arduous and strenuous nature of the job, and mentally, because of the tension that can build up over a period of time when a group of people are confined to one place, living under conditions causing physical and mental stress.

Secondly, that person must know how to look after himself so that he is not a liability to others. It is possible to learn on the job, but that is a very dangerous life-game to play. Physical strength is no substitute for experience. In other words, don't start filming on mountains, for example, unless you are a climber.

Occasionally, expensive equipment has to be sacrificed in the interests of safety. It is better to let a sound channel drop a few thousand feet than to try and stop it and then go with it. The clever bit is to decide when the moment of truth has arrived. Self-preservation is not understood by an armchair accountant and it is a tedious business to go into the most minute detail of why you lost interest in a few thousands of pounds worth of equipment.

Thirdly, the selection of what equipment is going to be used. This has to be the most reliable, robust, compact set of gear it is possible to get. Reliable, because you are likely to be in a pretty remote part of the world where replace-

Filming on extremely demanding "adventure" assignments requires top physical condition of crew members, prior experience with the elements to be encountered and—in terms of equipment—the most reliable, robust and compact set of gear it is possible to get, since the remoteness of such locations renders equipment virtually impossible.

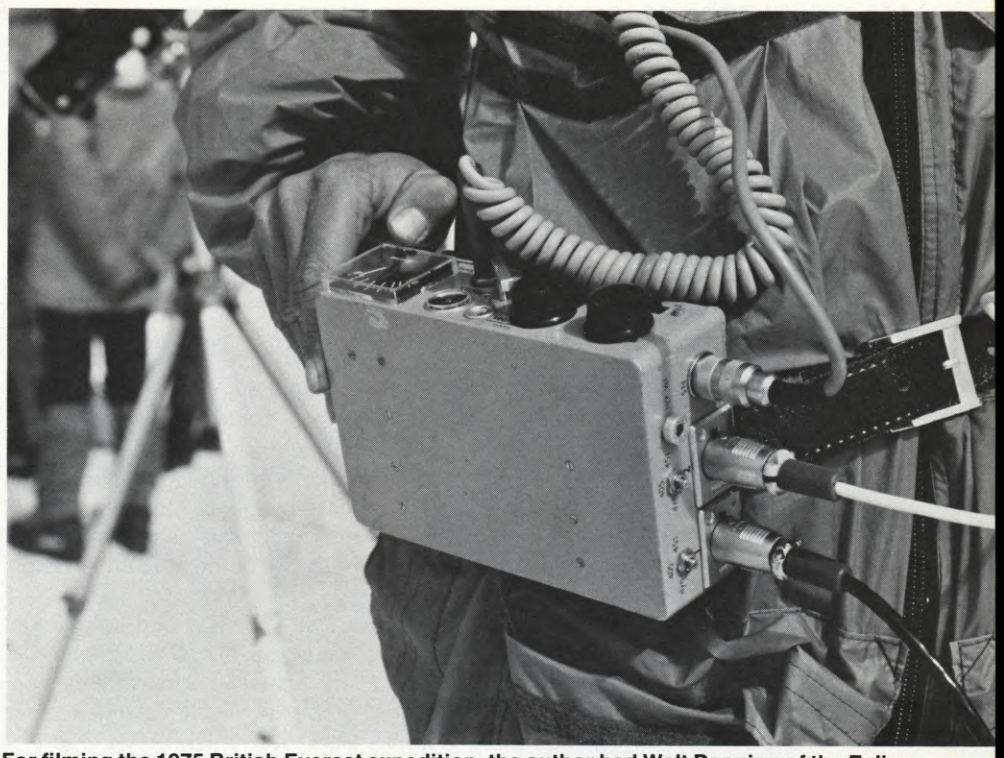
ment is virtually impossible, and even if it were possible, the delay would be intolerable. Robust, because no matter how careful you are, it is bound to get some rough treatment during the period of the location. Compact, because you are likely to be the only person around for transporting it, and even if you are lucky enough to have some one else to do the carrying, weight is of the utmost importance. So the order of priority is firstly the selection of the team and then the selection of the equipment.

The Amundsen story in the Explorer series was filmed near a village called Finse, in Norway. The only way of getting there was by train or helicopter. It is pretty remote and we knew before we went that the only place where we could relax was the hotel we stayed at in shared rooms. Finse, incidentally, is where Scott and his team tested their motorised sledges before their attempt on the South Pole and where location shots were done for the film "SCOTT OF THE ANTARCTIC".

We arrived by train at the end of February with snow falling heavily. The interior of the Framheim hut was built in the village hall and the exterior up on a plateau. We were lucky to have the Norwegian Home Guard to help us and they would transport us and our equipment by Snow Cat to the location.

The weather was a mixture of brilliant sun and blizzards and sequences were arranged to fit the weather pattern of the day. Up on the plateau there was usually a fairly strong wind blowing, even when the sun was shining, which would lift a gentle layer of spindrift and blow it along the ground. In bad weather the winds were quite powerful and when one is reminded that the still air temperature outside the hotel was −10°C, the chill factor of these winds would be quite considerable.

There was one day when I received slight frostbite across my nose. This really was my own fault for not wearing any head protection and of all the people in the team I should have known better. To try and wear headphones under a balaclava or duvet hood is very difficult and tends to cut you off from any discussion that goes on between takes. The only way of involving yourself in these talks is to take off whatever you are wearing on your head and remove the headphones. A solution to this is to use Sennheiser HD44 stethoscope type headphones. Whilst noise rejection is poor and the frequency response not of a very high standard, you can use them under head wear and you can hear what is going on between takes. The cable should be replaced as should all cables by Arctic type cable to prevent them going rigid and cracking in the cold. The Nagra 4.2 needs nothing done to it in order to work at sub-zero temperatures, except to ensure that the drive belts are of the recommended material that can withstand such temperatures.



For filming the 1975 British Everest expedition, the author had Walt Denning of the Ealing Film Department make up tiny mixers with two inputs to take any kind of microphone and power it if necessary, proper monitoring facilities and a remote start/stop for the Nagra SN recorder (which would be carried in a pocket). The mixers also featured proper PPM, tone source generator, a record indicator and a variable-level monitoring system.

I tried various microphones and windshields and found that the only type that proved suitable for the high wind conditions was the Sennheiser 415 mounted in a Sennheiser 805 windgag, cut down to size with a cloth shield over that. Occasionally it was also necessary to use the Sennheiser foam windshield, as well. There were times when even this was inadequate, so a snow wall was built behind which the microphone could be manipulated. Filming directly into the wind under these conditions was avoided because spindrift soon blotted out the picture.

Batteries for the Nagra were a problem because of their poor performance at low temperatures. I used Mallory alkaline cells which would last for about ten rolls of tape—whereas, in normal conditions, I expect them to last for at least forty rolls. The monitoring switch on the Nagra is difficult to use wearing thick gloves or mittens and allows snow to penetrate. On one occasion this caused the switch to freeze solid in the direct position. To take off your gloves to operate the switch invited you to leave parts of your finger frozen to it.

I am pleased to say that the final dubbed film used only original material recorded on location.

The film of the traverse of the Cuillin mountains on Skye was a pretty straightforward business, as I only had to cope with getting to the location and not worry about the exposure. Exposure, in mountaineering terms, implies the distance you will fall if you come off. The Cuillins rise to over three thousand feet from the coastline and most of it is sheer. They are very good peaks to climb on because the composition is basically gabbro—a very rough-textured rock that grips well—with occasional layers of basalt which can be a little difficult when wet.

There were three climbers involved and I used Audio Engineering radio microphones on them. Climbers tend not to talk when doing a route, so they were mainly used to record effects tracks. By using a wire cage round the Sony ECM 50 mic, clothing rustle, which is often a problem with radio mics, was largely overcome.

Climbing helmets were not being worn. Naturally, this gave no sense of perspective, so I used a Sennheiser 805 to give a sense of space. Because I was using radio mics I usually went ahead of the cameraman and the climbers and settled myself out of shot and let them come towards me. In locations of high exposure I would tie myself to the rockface and use a karabiner to clip all the gear—Nagra, receivers, and gun mic—to the rope so if anything slipped it

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SHOOTING A LIVE SYMPHONY ORCHESTRA CONCERT

The techniques and problems involved in filming a symphony concert straight through — and unobtrusively — utilizing multiple cameras

By JOSEPH HORNING

Pat Pace. That name means two things—great jazz and hard drugs. Born in Akron in 1930, Pat became nationally famous at the tender age of seven when he and his accordian won a CBS national talent contest hosted by Ted Mack's predecessor, Major Bowes. But his parents were modest Italian immigrants and they spurned all the offers from Hollywood talent scouts. Pat was not to become an ethnic Shirley Temple.

When he was seventeen, he left Akron for New York. By day he studied piano and composition with Vincent Persichetti at the Julliard School of Music, and by night he studied jazz with Charlie Parker and Dizzy Gillespie at the Three Deuces. He left New York four years later with a Julliard degree in his hand and a heroin monkey on his back.

Unable to function normally without drugs, and unable to get any kind of effective treatment, Pat began fifteen years on a nightmarish rollercoaster. He returned to Ohio and embarked on a successful musical career which was interrupted regularly by arrest and jail for drug abuse. It wasn't until the mid-sixties and the advent of methadone therapy that Pat was able to live and work within the letter of the law.

I had heard Pat play a number of times and knew first-hand just how good he was. I thought his story was a natural for a documentary film. Pat was playing a long-term engagement with his quartet at a Holiday Inn. I introduced myself at a break and outlined my idea for a film. I told him that between foundation grants and television rights, I thought I could raise film production costs. But talent fees would be deferred and possibly never paid.

Would Pat and his group agree? Not only did he agree, but he told me he was appearing as a piano soloist with a symphony orchestra in Cleveland just six weeks from then.

The whole plan fell into place. I wrote applications for production costs to foundations which had supported my work in the past. I contacted a television group and made a deal involving film processing and cash in exchange for television rights. And I set out to organize a crew.

The major sequences of the film were to be the concert shots with piano and full orchestra. A number of my friends who were professional filmmakers jumped at the chance to be involved in a multi-camera shoot, and as we went down to the wire we had four cameramen and five cameras: one Arri BL and two Arri-S, all three with synchronous motors, and an Eclair ACL and Bolex EBM, both with crystal. We also had two soundmen experienced in recording symphonic groups, two Nagra IV recorders, Neumann mikes, and a mile of cable.

The orchestra shared an auditorium with a theatrical company, so the stage had catwalks, a lighting grid, quartz-lights, and a stage manager who knew what he was doing. We rehung the lights, added some of our own Lowel-Lights, and came up with an f-stop of 5.6 with our Video News Film 7240.

Choosing camera positions was more complicated. Our basic problem was that two of the cameras—the Arri-S with synchronous motors—were extremely noisy. I decided to solve the problem by getting these cameras as far as possible from performers, audience, and microphones. They were placed side-by-side high on a catwalk above the orchestra, almost directly over the piano. One Arri-S had a 12-120 Angenieux lens which could pull moderately wide to very tight shots of the performers, and especially of Pat at the piano. The other was locked down with an 8mm Zeiss lens for an overhead covering shot of the entire orchestra, and was simply switched on and off by the operator of the other camera. These Arri's had barneys and blankets to muffle as much noise as possible, and were quiet enough from the auditorium floor.

The blimped Bolex EBM was centered at the rear of the stage. By shooting through a peep-hole in the acoustical reflector behind the orchestra, we were able to get excellent shots of the conductor with the 16-100 zoom lens, and the camera was not visible in any of the other shots. The Eclair ACL had a 12-120 Angenieux zoom lens and was elevated in a small balcony to the left of the stage for over-the-shoulder shots of Pat at the piano, plus clear shots of most players. And I was in the front row of the audience with the Arri BL and a 12-120 zoom not more than eight feet from the Steinway.

How were these cameras kept in sync? All the Arriflexes had A.C. synchronous motors which lock to the frequency of the 110-volt 60-cycle A.C. current that the power company delivers to your wall socket. Likewise, the Nagras

Filming of Pat Pace concert sequence from "FEELING FINE". (Foreground, back to camera) Producer Joseph Horning, with Arri BL. (Note signal light on magazine, partially covered with black tape so that it would shine toward other cameramen and not the audience.) Pat Price at the piano. (Note blimped Bolex EBM rear center, partially visible through acoustical reflector.)

took their sync signal from the same 60-cycle current via the ATN power supply and the QCP cable. But the Bolex and Eclair were generating their own 60-cycle reference frequency with their crystal-control units. If their 60-cycle didn't match precisely with the power company's 60-cycle, we could have disastrous sync problems.

Consultation with Tom Peterson, the wizard at Motion Picture Sound in Cleveland, reassured me that—barring a sudden demand for electricity that might disrupt the power company's 60-cycle current—we would be all right. And, in fact, the sync between all cameras and recorders was perfect.

With all that film grinding through five cameras simultaneously, I got very paranoid about depending on only one sound recording. Any serious problem would put us out of business altogether. So I used two soundmen. Each had his own Nagra IV with two mike inputs—one for the piano and the other for the orchestra—to mix together in order to make a mono track.

Too cautious? Well, the unthinkable did happen. One of the Nagras suddenly and inexplicably switched *itself* from 7.5 ips to 15 ips, ruining that tape. But the other recording was perfect from start to finish.

Organization was still another problem. The traditional television way to shoot a concert is for the musically-inclined director to study the score well in advance and mark his planned shots on it. During the actual taping session, this marked score is the master plan. A musician in the control room reads the score and moves his finger along with the place in the music. An assistant director reads ahead and notifies the cameramen over an intercom of their next shots. The director checks the planned shots in the various monitors and calls them out to the switcher.

This method had all sorts of appeal, because the director is fully in control of the concept and execution of the show. But even though we could have rigged an intercom among the cameramen, as a director I wouldn't have known whether a camera was focused up correctly on the oboe or incorrectly on the English horn next to him. Without the video feedback to the director, it appeared too risky.

So I opted for the simple method which gave each cameramen a single main job—one to shoot the conductor, one to shoot orchestral soloists, one to shoot a wide cover shot, and two to shoot the piano player. This worked perfectly. Since both pieces were piano concertos, we always had a choice of shots of Pat at the piano, with three other shots for added variety.

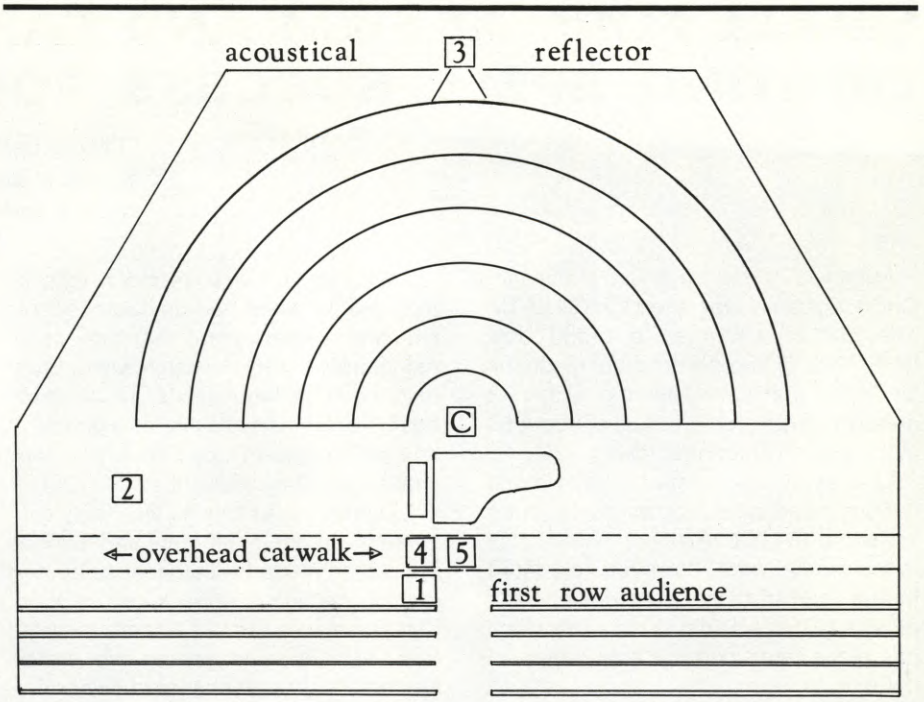

Diagram showing placement of the multiple cameras in the concert hall. (1) Arriflex BL, first row, auditorium floor. (2) Eclair ACL, elevated in side balcony. (3) Bolex EBM, blimped behind acoustical reflector. (4) Arri-S, on overhead catwalk, with 12mm-120mm lens. (5) Arri-S, on overhead catwalk, with 8mm fixed lens.

Another problem was how to stop and start five far-flung cameras in the dignified hush of a live symphony concert without upstaging the conductor and disturbing the audience. This was especially critical because the two movements we were shooting would take almost all of a 400' roll of film. What we needed was a silent visual signal.

I clamped a yellow darkroom safelight to the magazine of the BL located in the front row of the audience, and told the cameramen to keep their eyes on it.

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Producer of "FEELING FINE", Joseph Horning, gives Pat Pace a few camera pointer prior to the shoot. The film, which was made possible through grants, plus cash and film processing support from a television group, was telecast by the Scripps-Howard organization and has gone on to win many awards. (Photographs by Judith E. Horning.)

SMALL FORMAT FILM AND TAPE, PLUS SIMPLE LIGHTING SPELL SUCCESS FOR UHF STATION

"Thinking small", while having the courage to experiment and innovate in untried areas, has made it possible for this UHF station to produce news and commercials on a competitive basis

In mid-1970 and fresh out of college, Chuck Cyberski was hired by KDUB-TV. The station was then a brand new UHF—one of about a dozen to go on the air about that time—serving a market area which covered a radius of about 50 miles around Dubuque, Iowa.

Like every "U", it started with some serious handicaps. For example, there are some 164,000 television households in the market area; however, little more than a third of these were equipped to receive KDUB's signal (a situation which has since been considerably improved upon).

Furthermore, the station was competing with 11 VHF stations brought in by the cable from as far away as Chicago, to say nothing of a local newspaper and several radio stations with strong claims to the market.

The station was technically well-prepared to meet any production challenge. Its 60-by-60 foot sound studio was one of the largest and best equipped in the midwest, outside of Chicago. the overhead lighting grids, totally equipped with Berkey Colortran fixtures, could pour over a half-million watts of controlled light on that stage from pre-set circuits.

That's about twice as much light as they would need for any foreseeable situation; which meant that they could rise quickly to any occasion without running up high labor costs for resetting equipment. And that's just an example of how well-prepared they were to meet any challenge—they thought.

Cyberski states that he was fairly conversant with the equipment and facilities the station started with, because his first job was helping to unpack and set it up. KDUB's owner, Gerald Green, invested over $1 million in getting the station started. He was an absentee owner during that first year when the economic realities of operating a new UHF television station first came home to Cyberski and the rest of the stall.

Because KDUB was a UHF, even though they were an ABC affiliate, revenues earned from the network for national and regional advertising were prorated accordingly. And because they were, in effect, the new boy in town, it became abundantly clear that they were going to have to fight hard to earn each local advertising dollar, Cyberski adds.

"The alternative to the last was clear and simple: KDUB-TV was going to have to be able to earn its keep, or like almost all of the other UHF's that went into business when we did, we were going to go dark quickly," he says.

"The problem was obvious. We were in a chicken and egg situation. To earn local advertising revenues, we were going to have to create a strong identity as THE local television station. Which meant we had to be able to produce local news and other programs which attracted audiences. Once we got that type of a situation going, we believed that we could build our ratings and inspire more people to install UHF antennas. This, in turn, would bring our network earnings up and also enhance our local advertising."

So, in effect, everything hinged upon KDUB's ability to produce local programming and sell local advertising. The last also required a production capability, since it was in the station's own interests to make certain that local advertisers—who are mainly retailers—had an effective vehicle for their advertising: good commercials. Dubuque—with its population of 75,000 people—didn't exactly provide an environment which attracted filmmakers who could produce this type of commercial. And certainly local retailers weren't going to go to Chicago to find them.

Even with its modern studio facilities, the KDUB staff realized that the way to build local interest was to originate programming—including news and commercials out in the community where the action was occuring. There was no doubt in anyone's mind that if they had been content to have their newsmen come into the studio to read their reports they would have been hard pressed to separate themselves form local radio. And the same held true for much of the local advertising.

KDUB-TV, in Dubuque, Iowa, one of about a dozen brand new UHF stations to go on the air in the early 70s, operates a 60-by-60-foot sound studio with a capability for producing over a half-million watts of light. All of the lighting equipment was supplied by Berkey Colortran. The studio is one of the largest and best equipped in the midwest, outside of Chicago.

SWITCH FROM 16MM TO SUPER-8 EFFECTS COST SAVINGS

They started out just like the bigger stations, originating single system sound on Ektachrome EF 7242 film, which was processed in-house using Hunt ME-4 chemicals in a Houston-Fearless processor. According to Cyberski, that operation nearly drove them out of business.

"Our advertising rates just couldn't justify the overhead for 16mm film," he states.

Charles Cyberski, Operations Manager, who joined KDUB-TV fresh out of college, installs a Colortran 650-watt light on top of a special stud welded to a Magnavox color video camera.

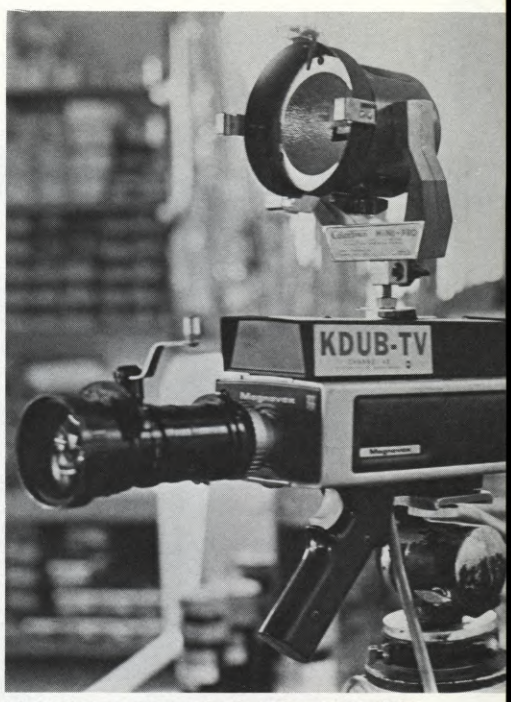
About that time, Dick Neville (who was an executive producer for WGN-TV) and Cyberski appointed themselves as a committee of two to look into the state of the art of Super-8 sound film production. They announced their intentions at a National Association fo Broadcasters convention and were literally inundated with mail from people who were either working or interested in the medium.

Soon afterwards, Cyberski approached Gerald Green with a proposal for converting both news and commercial film operations to Super-8. It wasn't a small step to take, because at that time the medium was still largely amateur-oriented. Substantial time and energy had to be dedicated to testing all manner of equipment, films, projection systems and technologies for making the medium commercially acceptable.

However, the ends justified the means, for it marked the beginning of the station's financial salvation, and set KDUB-TV up as a major communications vehicle in the community. Within a year the news film production costs were trimmed form $30,000 to$15,000, even though there was a major increase in the amount of footage produced and used.

And more than just the cost-saving was involved. Working with Wilcam cameras for single system sound and the prestriped Super-8 version of Ektachrome EF film, one-man film crews were used. Even indoors, two people could do the job by carrying a Colortran Mini-Pro lighting kit. Indoor locations were lit exactly as had been done when working with 16mm film.

"There were many other pluses, "Cyberski continues. "For example, because of the automatic features of the Super-8 cameras coming onto the marketplace then—and we actually tried all of them—we got uniformly well-exposed



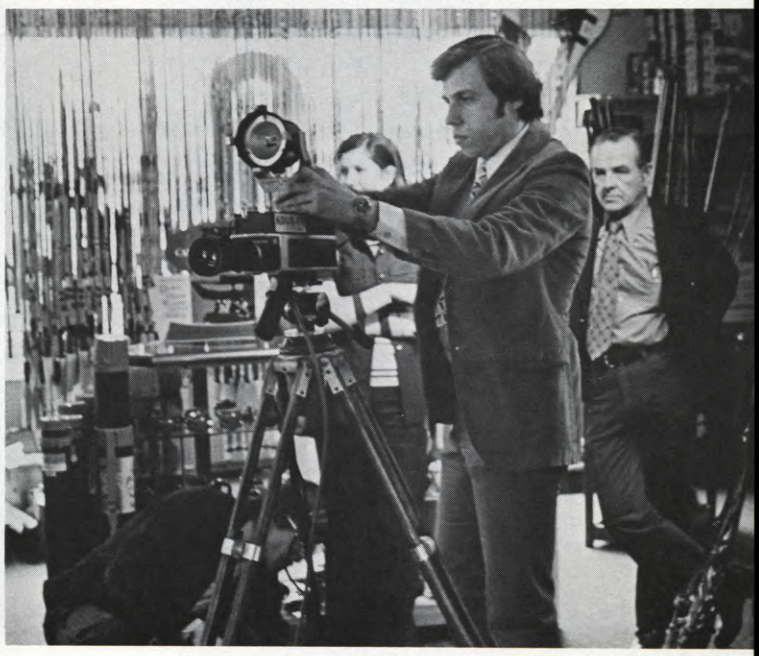
After three-quarter-inch tape proved impractical for reasons of size, weight and power supply, the reliable half-inch Magnavox Chromavue 400 camera was adopted for sound news interviews.

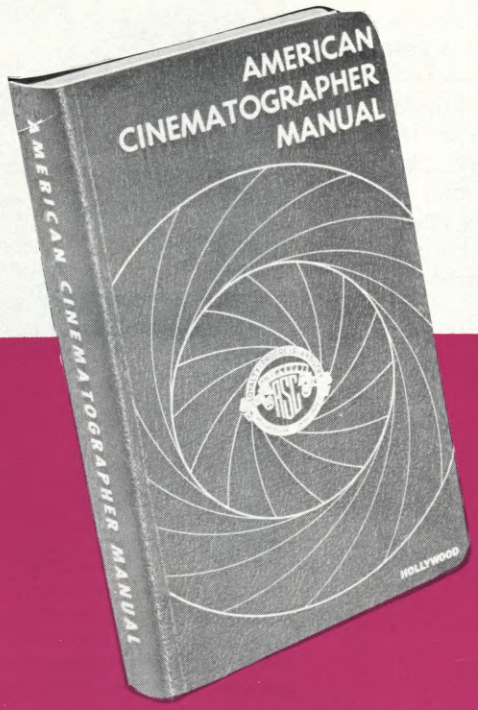
footage. And that held true for 'amateur' coverage too. We gave a silent Super-8 camera and film to practically everyone working for us and alerted them to look for spot opportunities to cover news. More than a little of the 300 feet of the newsfilm that we processed daily was obtained in this way."

However, even with the greatly improved situation, the new format wasn't

Continued on Page 316

(LEFT) Most commercials at KDUB-TV are produced with Super-8 Ektachrome 40 film, using a Nizo camera and three 650-watt Colortran lights. (RIGHT) A KDUB-TV crew sets up to tape an interview on location at a local sporting goods store. The subject is a fishing report. The medium is half-inch color tape, using the Magnavox camera with 650-watt light welded on top. Setup in the field is simple, since the camera weighs only seven pounds and its power supply ten pounds.





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STEADICAM INVENTOR HONORED BY BRITISH SOCIETY OF CINEMATOGRAPHERS

British cinematographers tender their prestigious technical award to the inventor of this unique film/video camera stabilizing system

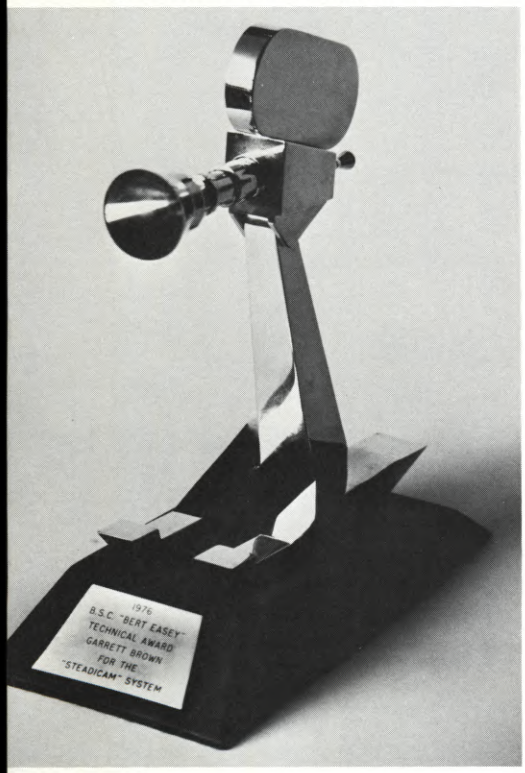
The British Society of Cinematographers (B.S.C.) has recently presented Garrett Brown, inventor of the STEADICAM™ system, with its prestigious "Bert Easey" Technical Award—a special award bestowed at the discretion of the Board of Governors of the Society only when a new technical development is deemed especially worthy. (The handsome award is in the form of a stylized model of a motion picture camera, specially designed by renowned Academy Award winning cinematographer Freddie Young, B.S.C.)

Designed and manufactured by Cinema Products Corporation of Los Angeles, the unique STEADICAM film/video camera stabilizing system has revolutionized film and video production methods during the past two years, breaking exciting new ground in handheld 16mm and 35mm cinematography, as well as in video.

The STEADICAM system delivers remarkably steady and dolly-smooth moving shots while the camera operator is himself in motion: walking, running or riding in any kind of vehicle (car, boat or airplane). More than any other technological development in recent years, STEADICAM has extended the creative scope of the cinematographer and the director while, at the same time, achieving the remarkable feat of effectively reducing production costs. It is recognized worldwide as an invaluable production tool both in the studio and on location.

STEADICAM has already made its dramatic impact on numerous video and film productions, including such features as BOUND FOR GLORY, MARATHON MAN, ROCKY, MacARTHUR, EQUUS, and many more. ■

Named for the late, beloved Bert Easey, long-time camera department head at Pinewood Studios, the award is a handsome stylized camera gold statuette designed by Freddie Young, BSC.



Garrett Brown, the young inventor of the revolutionary STEADICAM film/video camera stabilizing system, is shown here operating his creation. The unique device, which not only extends the creative scope of the cinematographer, while reducing production costs, has become recognized worldwide as an invaluable production tool, both in the studio and on location.

SHOOTING A SUPER L-O-N-G CRAWL TITLE

A roll-up title running 372 feet in 16mm is one for the Guinness Book of World records—but creating it was something else again

By ROY ZEPER
Chief of Photography, Wyeth Laboratories

The crawl or roll-up title will sometimes precede or follow a technical film for presenting some detailed information.

Usually they are short.

Within medical films intended for the profession, when the film's subject is on specific drugs, the F.D.A. requires a disclosure to be added onto each print. This is usually based on the information within the descriptive circular (D.C.) that accompanies these ethical prescription drugs. This D.C. explains the action of that drug, dosage and administration, contra-indications and adverse reactions that may occur and precautions for the prescribing doctor to consider.

These can get long.

I started the project by photographing overlapping sections of the D.C. onto 8" x 10" Kodalith high-contrast sheet film, composing the column of copy three inches wide on the groundglass. A split-back on the still camera permitted making two exposures on each 8" x 10" sheet of film. All the negatives were then cut into two strips, 4" x 10" each and, using masking tape, were fastened to 4-foot-long cardboards into which I had cut out a 3½" slit extending lengthwise down the middle. This acted as a frame for the negatives and, in this instance, required two cardboards secured together. The total was 8 feet long with the message area in the center slot actually 6' 8" in length.

The procedure was to mount the motion picture camera over a light-box which supplied rear-illumination to the Kodalith negatives slowly passing over the light-box. This is shown and explained in the accompanying photographs.

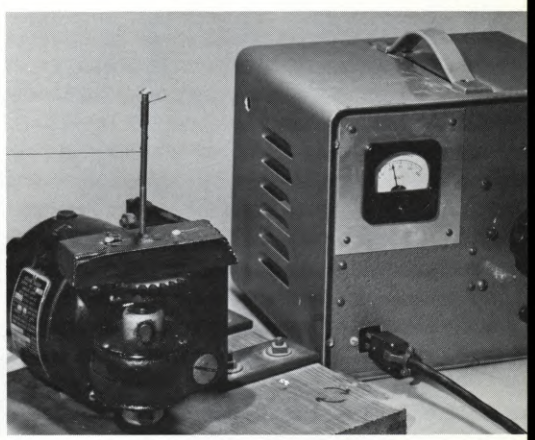
There are three controls which affect the rate of crawl:

1. The speed at which the shaft of the motor revolves as it winds up the thread pulling the cardboard mount.
2. The diameter of this shaft.
3. The filming speed of the motion picture camera.

Shown is a 1/4" winding shaft I made up, using a long bolt affixed to a wooden block, which is secured to the revolving motor plate by two nuts and bolts. The motor is a series-type universal wind with a 10-1 geared-down end shaft, capable of low revolving speeds by lowering the voltage it receives, in this instance 12 RPM. Through trial-and-error I arrived at a rate of travel for the cardboard mount of 7¾ inches per minute, which made for a readable speed. The copy contains technical data intended for a medical audience familiar with the terminology.

My preference is to run the camera at 24 fps, changing from this normal speed only when the limitations are reached by the other two control variables. I have found that strong tailor's sewing thread is

Continued on Page 307

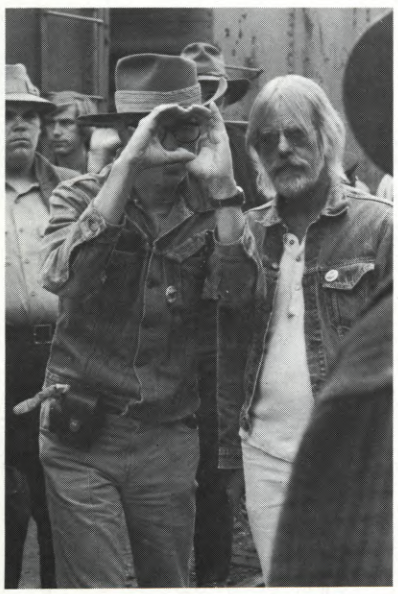


(ABOVE RIGHT) Note the 1/4" belt secured to the rotating shaft of the variable speed motor which is driven by reduced DC voltage through the variac control. (BELOW LEFT) The high-contrast negatives (1) slide within the channels (2), pulled by the thread (3), as it is wound onto the thin revolving shaft (4) of the geared-down variable-speed motor (5), which rotation is controlled by the reostat box (6). Colortran unit (7) raises lamps to 3200°K in light box(s). (RIGHT) Strips of Kodalith negative are secured to cardboard.

Haskell Wexler talks about shooting with his 35BL.

Mr. Wexler has won two Academy Awards for his cinematography—last year, for shooting *Bound For Glory*. He owns an Arri 35BL.

Haskell Wexler shooting *Bound For Glory* scene with 35BL. "For hand-holding," says Mr. Wexler, "This is the best balanced silent-running 35mm camera available."



Wexler with *Bound For Glory* director Hal Ashby.

"The extras were waiting around between setups, one day," says Haskell Wexler. "We were at Stockton, shooting *Bound For Glory*. The extras were dressed as migratory workers and their families."

Natural

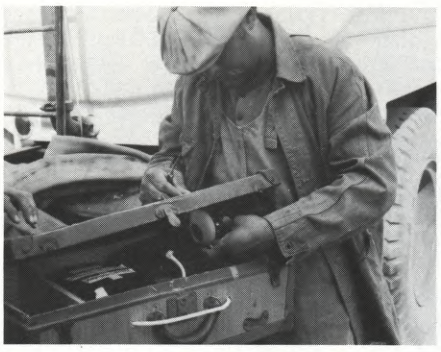
"They looked great—kids playing around—behaving naturally, because they *weren't* being photographed. So we set up secretly inside a tent, and picked things out with the long end of the zoom."

Suitcase

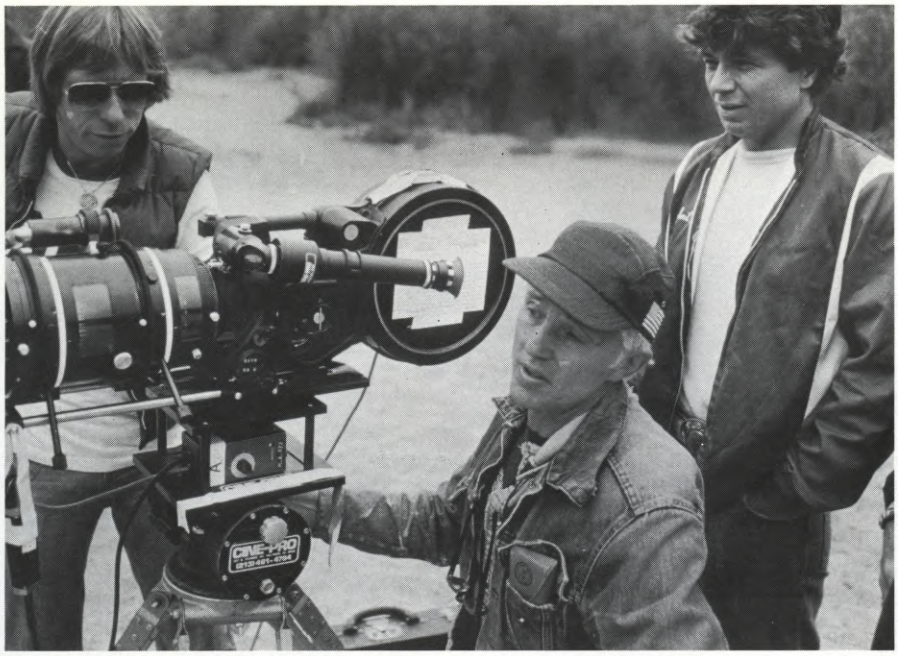
"Then we hid my 35BL in a cardboard suitcase, with holes cut for the lens and eyepiece. The second operator dressed up like the extras, and he sat down among them with the case on his lap."

Sideways

"Even when they realized what was going on, they still acted more naturally, because he was sitting down and facing *this* way, with the suitcase pointing *that* way, off to one side."



Above: Operator, dressed as migrant worker, checks fit of hole cut in suitcase for 35BL viewfinder. Below: The 35BL being positioned inside the suitcase.



Working on STP commercial with actor Robert Blake. "I much prefer to light looking through a 35BL – the image is brighter and clearer," says Mr. Wexler. "Hand-held, with the short eyepiece, the 35BL lets you see the edges of the frame more easily than any other portable 35mm camera."

Wexler and 35BL in swimming pool, shooting sync sound scene for *One Flew Over The Cuckoo's Nest.* Note relatively simple plank and stepladder rig supporting small camera.

Shooting STP TV commercial, Wexler gives instructions to cameraman perched on sidecar chassis with 35BL. Raincoat is for puddles in dirt road.

Unobtrusive

"That's one big advantage of an unobtrusive camera like this. Even with professional actors, there's one less thing to distract them. I can often *ease* quietly into a scene – using the camera's internal slate system and my radio bloop, and waving a finger to indicate *Rolling*."

CLIO

Mr. Wexler used a 35BL to shoot Robert Blake in the STP commercial that won a CLIO award this year. For the sync-sound footage, the camera was equipped with a 1,000 foot magazine and a 20-120mm zoom lens.

Motorcycle

But they also needed some closeup footage of Robert Blake's face as he gunned his motorcycle down a dirt road.

Hand-held

"There was no room for an insert car," says Mr. Wexler, "So we mounted a sidecar chassis on the bike—and the operator rode on that with the 35BL. 400 foot magazine and a 24mm hard lens."

Lightweight

"In the bad old days, we'd have needed a separate, lightweight wild camera for that shot. But the 35BL took care of it nicely."

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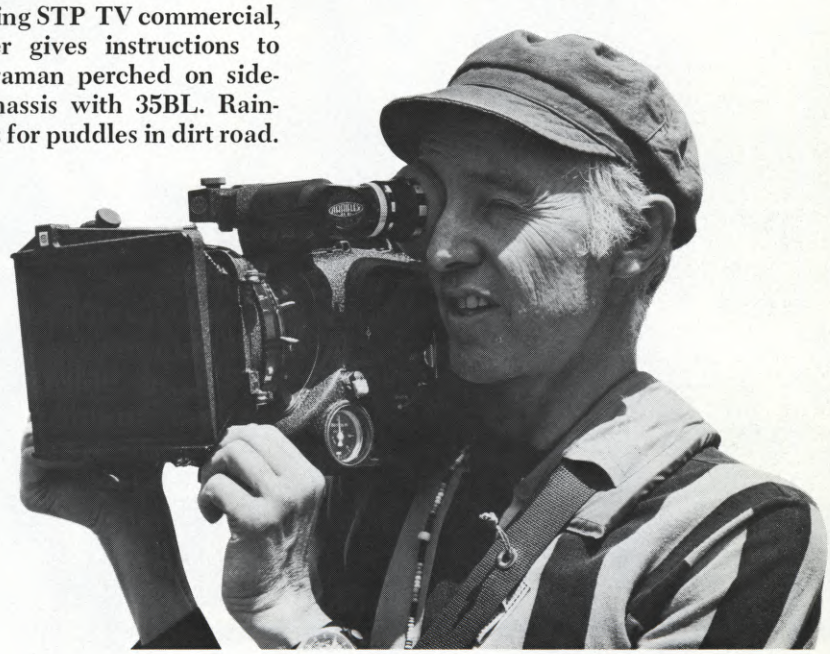

A TEST CASE FOR PROFESSIONAL SUPER-8

A determined film-maker on an almost non-existent budget proves that professional Super-8 makes possible certain kinds of productions that otherwise would be completely unfeasible from the economic standpoint

By BRUCE MICHAEL GLENN
Director/Producer

One of the greatest advantages of professional Super-8 is that it makes certain kinds of low budget productions possible that would otherwise never get off the ground in the larger formats. Such was the filming of "A SECOND CHANCE".

I became interested in perceptual motor training, which is a type of occupational therapy used to develop body movement in delayed, autistic and retarded children, largely through a friend, Katheryn Porter, who was working in the field. We decided that a film which could visually demonstrate the training process in a positive way would help therapists in communicating with parents, and as training aids.

My decision to use Super-8 for the project was largely due to economic considerations, as I simply didn't have the money to rent a full complement of 16mm equipment. And as I had been pioneering professional Super-8 production techniques and equipment designs for years, I already owned the complete production facility to do the job. All that remained for budgeting was film and laboratory costs, transportation and pay for the crew. As I did most of the photography myself, and my technical collaborator also recorded sound, the budget was even further reduced.

Educational films are seldom projected in anything larger than a small auditorium or conference room, for which purposes the Super-8 image is adequate to the requirements of the non-professional audience. All in all, I ended up with a couple of Super-8 composite prints, an internegative, a 16mm blow-up and a transferred video cartridge of a twenty-minute sync-sound color film for about one thousand dollars. With these I can now easily raise the money to distribute the film myself by sending a brochure out to prospective interested parties.

The first major decision to make was the choice of film stock. I made a film test using one cartridge of Super-8 7242 and had it post-flashed (cost—$7.00). But, whereas I achieved the low contrast image I was used to in 16mm production, it was obvious that the granularity would never make a good 16mm blow-up or quality video transfer. I wanted the latter two formats in order to distribute the film to schools for programming in whatever projection system they used. The only answer was to use Kodachrome 40, because of its image sharpness and fine grain structure.

Kodachrome, however, presented its own set of drawbacks. The first is its relatively slow speed, which is compounded by the fact that an 82A filter must be used to balance its 3400°K emulsion to tungsten 3200°K color temperature. The 82A reduces the film speed only one-third stop, however, bringing Kodachrome's effective ASA down to 32. An even greater problem was that the 7-80mm Schneider lens on my Nizo S-800 eats up about three stops more light. I had to make special ASA markings on my spot meter to get a correct exposure reading!

As Kodachrome is a high contrast film intended for projection, I needed a low 1½:1 lighting ratio to offset contrast build-up through the internegative. Facing all of these rapidly compounded problems almost made me give up and go back to 16mm flashed 7242! However, the final solution came through a careful use of lighting. I use Lowel Tota-Light and focusing quartz systems for all of my productions because of their highly flexible and compact design. By placing more lights into the set for background illumination and using a lot of fill light, I was able to shoot medium-large interiors wide open and tighter scenes around T/2.8. I placed colorful objects in all of the scenes to give a good subject contrast under the low lighting ratio.

Shooting wide open, as with all other aspects of Super-8, demands a great deal of care in matters such as focusing and lighting, but when the rushes came back from the lab I was happy that I had used Kodachrome. The color and sharpness of the image made up for all of the technical difficulties.

An added advantage of shooting in Super-8, which hadn't occurred to me until production was under way, was that the small size of the equipment, and the fact that Super-8 has been an amateur format for years, made the production far less threatening to non-professional subjects and gratifyingly more personal. For shooting sync-sound interviews in homes, the production crew consisted of one other person and myself. My assistant slated the scenes and kept the shooting log, while I filmed and monitored sound through earphones. Whereas performing most of the crew functions myself demanded a greater degree of concentration than I had ever experienced in pro-

During a break in the filming of "A SECOND CHANCE", cinematographer Wayne McCall and grip Bruce Hughes relax, while therapist Al Keyes looks on. For a cash outlay of about one thousand dollars, the author ended up with a couple of Super-8 composite prints, an internegative, a 16mm blow-up and a transferred video cartridge of a 20-minute sync-sound color film.

duction, the pay-off came in the responses of the subjects. For some reason, a small camera doesn't intimidate a non-professional the way a large camera does. The subject doesn't think, "Oh no, this is Hollywood! What am I going to do now?" They feel more at ease as though someone were making a home movie of them.

For the editing I used a horizontal editing table, which I designed some years ago to interchangeably accommodate the special needs of 16mm or Super-8. I simplified the film path of my viewer and polished its gate with crocus cloth and jewler's rouge in order to prevent scratching when I didn't have the budget for a work print. I added velvet film bags beneath the split reels in order to catch loose film and thus avoid the famous "spaghetti" problem. As I used the Super-8 Sound recorder to originate first generation sprocketed fullcoat, I didn't have to wait until a ¼" track was transferred at the lab. Extra care had to be taken in conforming the original to the work print, but like any technical problem, once the skill had been mastered the rest was automatic.

All factors taken into consideration, professional Super-8 and producers who are willing to use it are here to stay. The ball now has to be picked up by Kodak by making ECO available in Super-8 cartridges. There are hundreds of small businesses in Santa Barbara that couldn't afford to pay for a 16mm commercial, but could afford to pay a small crew to come in and film their operation with in-camera dissolves and single-system sound and then have it transferred to television on a Kodak video player. If I had decided to film "A SECOND CHANCE" in 16mm, I would no doubt still be running around trying to raise funds for production. As it stands, the film is in the can. ■

Director/producer Bruce Michael Glenn encourages child on scooter board, as cinematographer Wayne McCall dollies with the action. The easygoing atmosphere of the production, aided by the non-threatening size of the Super-8 equipment, brought out more natural, spontaneous reactions from the subjects—a definite plus when working with non-professionals.

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THE AMERICAN SOCIETY OF CINEMATOGRAPHERS FILM STUDENT SYMPOSIUM

A.S.C. Oscar-winning cinematographers meet at the Academy for panel discussion with students of 23 West Coast colleges and universities

A 12-man panel of Oscar-winning Directors of Photography was featured at a student symposium hosted recently by the American Society of Cinematographers. Held in the Samuel Goldwyn Theater of the Academy of Motion Picture Arts and Sciences' Beverly Hills headquarters, the by-invitation-only event attracted a near-capacity attendance made up of cinema students representing 23 West Coast colleges and universities.

The twelve cinematographers, all of whom have won the coveted Academy Award for "Best Cinematography" at least once, included: Joseph Biroc, Daniel Fapp, Lee Garmes, Conrad Hall, Winton Hoch, Fred Koenekamp, Milton Krasner, Charles Lang, Ernest Laszlo, Joseph Ruttenberg, Karl Struss and Haskell Wexler.

The program, arranged by event coordinator Charles G. Clarke, began at 7:30 p.m. with a brief welcoming introduction by A.S.C. President Linwood G. Dunn, followed by a screening of "BOBBY", the student film which won for Martin Ollstein and UCLA the third annual A.S.C. award as Best Photographed College Film of 1976-77.

Next were presented 10-minute segments from feature motion pictures which had won "Best Cinematography" Oscars for their A.S.C. Directors of Photography. These excerpts included: "SUNRISE", 1927-28 (Karl Struss); "SHANGHAI EXPRESS", 1931-32 (Lee Garmes); "A FAREWELL TO ARMS", 1932-33 (Charles Lang); "THE QUIET MAN", 1952 (Winton C. Hoch); "THREE COINS IN THE FOUNTAIN", 1954 (Milton Krasner); "GIGI", 1958 (Joseph Ruttenberg); "WEST SIDE STORY", 1961 (Daniel Fapp); "SHIP OF FOOLS", 1965 (Ernest Laszlo); "BUTCH CASSIDY AND THE SUNDANCE KID", 1969 (Conrad Hall); "THE TOWERING INFERNO", 1974 (Fred Koenekamp and Joseph Biroc); and "BOUND FOR GLORY", 1976 (Haskell Wexler).

There followed a panel discussion between the cinematographers and the assembled film students, based on written questions collected from the audience.

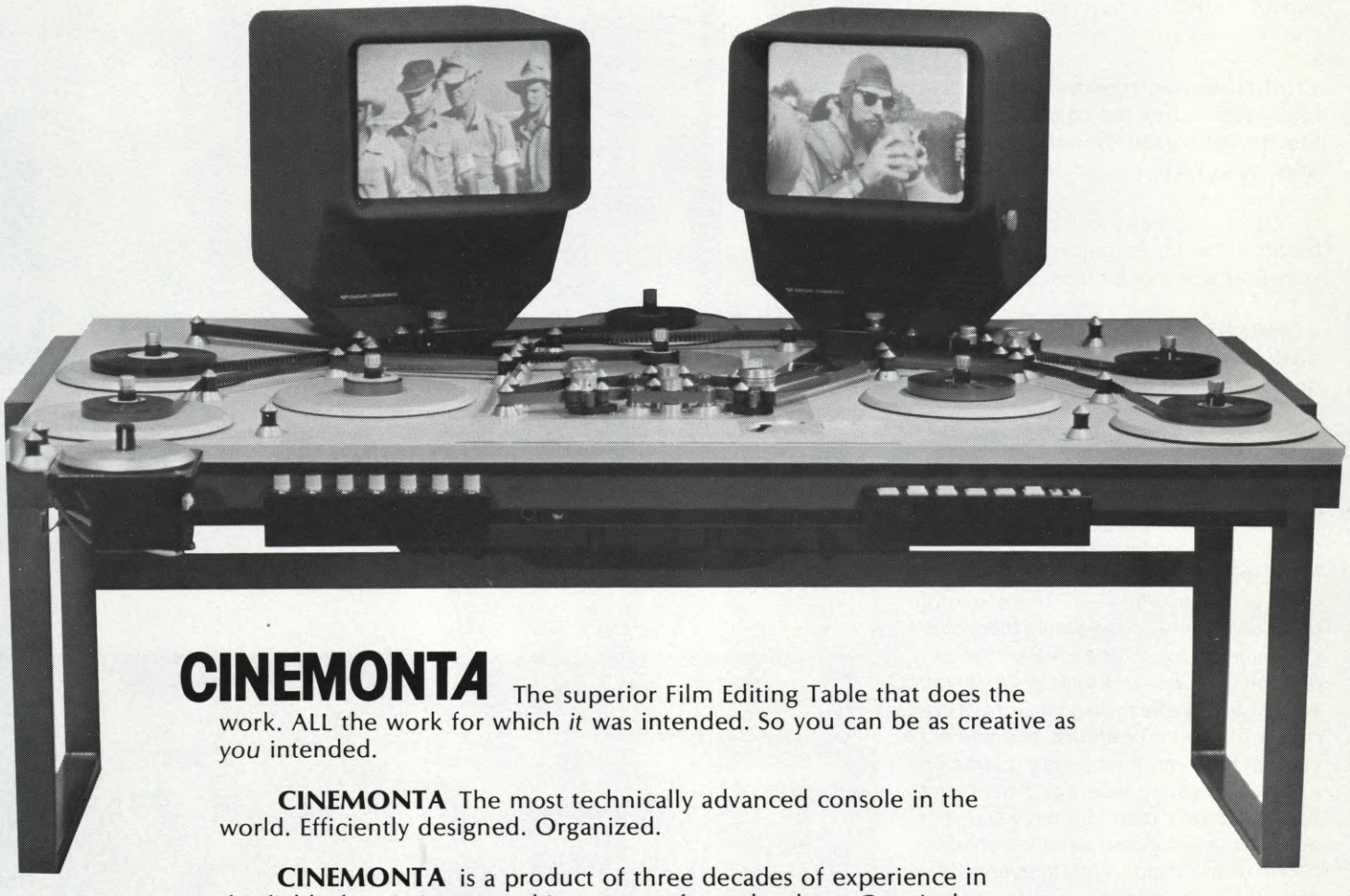
Following the panel discussion, there were screenings of "NEGATIVE IMAGE" and "THE PREPARATORY", student film which won for Denis Mayer of San Diego State University and Philip Earl, Jr., of USC, the first and second annual A.S.C. awards for Best Photographed College Film of 1974 and 1975 respectively.

A.S.C. President Dunn reluctantly adjourned the symposium at 11:30 p.m., although, judging from the enthusiasm of the audience response, it could have continued for considerably longer. ■

(LEFT) The distinguished panelists, all winners of the coveted golden statuette for "Best Achievement in Cinematography", met in the Samuel Goldwyn Theater of the Academy of Motion Picture Arts and Sciences in Beverly Hills and answered written questions submitted by student members of the near-capacity audience. (RIGHT) A.S.C. President Linwood Dunn opened the Symposium with a few welcoming remarks.

Among those present for the panel (left to right): Conrad Hall ("BUTCH CASSIDY AND THE SUNDANCE KID") and Daniel Fapp ("WEST SIDE STORY"); Ernest Laszlo ("SHIP OF FOOLS"); Karl Struss ("SUNRISE", with Charles Rosher); Charles Lang ("A FAREWELL TO ARMS"); Winton Hoch ("THE QUIET MAN", "SHE WORE A YELLOW RIBBON", "JOAN OF ARC"); and Fred Koenekamp ("THE TOWERING INFERNO", with Joseph Biroc).

It took the Dutch to give us freedom of expression.



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normal, but it helps other things. Then, of course we could get into fluorescent lighting, which is a whole pain-in-the-ass subject in itself. That can be handled too, but it's not easy. So far we're on technical things, I realize. But you can get all of them under control and plan ahead of time by seeing the locations and having surveys with the director and the art director. For instance, you can change all the fluorescent lights in an area if you're going to work there long enough to make it pay. You can install corrected lamps.*

QUESTION: Don't you think the public really associates the colder light with the daylight even though they don't think about it?

WOOLSEY: Perhaps to a small degree, but not to the degree that you sometimes see. That is, it's quite blue.

COMMENT: Your eye will compensate somewhat, but the film won't compensate at all.

WOOLSEY: Your eye will compensate completely, unless you have something to compare it with. Like I mentioned before: putting white light on part of the scene. Then you will see the contrast of any other color, whether you want it cold, warm or whatever. That's one of the problems if you use a tinted filter over the camera lens. It changes everything and then you're stuck with it. When you see off-color dailies you get used to it in a matter of 15 or 20 seconds and you accept it. Then the next scene comes on and it's something else. You hate it for a second or two, then you get used to it again. Your eye does have that fantastic power of adaptation. I feel that faces, the criteria we are most critical about, should look pretty normal all the time. If any color is used on faces, I prefer it to be from other than the key or principal light, excepting for effects. There are many natural sources which can motivate color, like the back light from a kerosene lamp on an old western set. I like to see light coming out of windows at night in a warm color. I utterly detest that blue moonlight effect they seem to love at Universal-TV. I shot a few night western things there and went to a lot of trouble to create warm light effects from lanterns, out of the windows, etc.—backlights, cross-lights and all that, and lit the faces with white light. Finally I saw the film on TV, because you never get to see a television effort until it's out. And they made everything blue—wiped out my

Woolsey with director Robert Clouse, during the recent filming of "THE PACK", a forthcoming Warner Bros. release. The cinematographer works in close concert with the director to develop a visual style appropriate to the theme of each assignment. (BELOW) On location for "THE PACK", Woolsey holds a PAR-64 portable booster light, equipped with dichroic filter. If other alternatives are available, he would rather not use dichroics, due to their inconsistency.

warm effects completely. I think it's ghastly, even though moonlight really is blue—exactly the same as daylight. There's no difference. Furthermore, it's polarized light, which you can do some tricky things with. You can see it if you take a still picture, where you can take a proper exposure at twilight, with lighted windows. Then you get those beautiful golden windows and that cold moonlight effect. But doing a still picture with the color effect is one thing and doing a whole sequence or scene in a motion picture is something else. It's been demonstrated a number of times, for example, with "MOULIN ROUGE", where Eliot Elisofon, the noted photographer, was a color consultant. He did many gorgeous still concepts which they thought would be great on film. Chartreuse light coming out of low bistro windows, etc. But they were the main key lights. I think John Huston was rather enamored of these looks and wanted to shoot the whole picture like that. Oswald Morris came to real attention at that time as cinematographer of the picture. He went in for all the smoke and other marvelous effects that they got. But after a few tests they elected not to use this overall color, because you just didn't like it after you saw a scene go on for a while. George Stevens experienced the same thing on "THE GREATEST STORY EVER TOLD". Again, it was Elisofon who went out on the surveys and shot some marvelous scenic things. They were just gorgeous. They were going to do whole sequences with that overall color. After looking at some of it, George Stevens, who was a very knowledgeable man photographically, said, "No. It just doesn't work when it moves."

QUESTION: Didn't Huston fool around a lot with the color on "MOBY DICK"?

WOOLSEY: Yes. That was a very interesting process where they added a black degrading overlay. It was Technicolor's imbibition printing again. They printed the tri-color primaries and then overlaid a black of just a certain density, which degraded all the colors.

QUESTION: We have nothing left for our archives now that type A is gone. Is there any permanent . . . ?

WOOLSEY: The separation negatives still exist for all those pictures. In fact, they still make separation negatives or I should say, separation black and white positives from current movies now from the original color negatives. They are for archival purposes, and will not deteriorate where the dyes will; so that preservation is possible.

QUESTION: Does the 5247 hold up over the years?

WOOLSEY: It hasn't been out long enough to tell.

QUESTION: Well, I mean, I would have thought they'd have figured that out.

WOOLSEY: I don't know. I've got 35mm Kodachromes that are awfully old—about 20 years or more. They look just great, but they aren't projected very often. I know that positive prints from 5254 and 5247 have sometimes faded. (I shoot a lot of negative with my still camera and take it to RGB, as I'm sure many of you do.) Once in a while I've taken some slides out to project and I know

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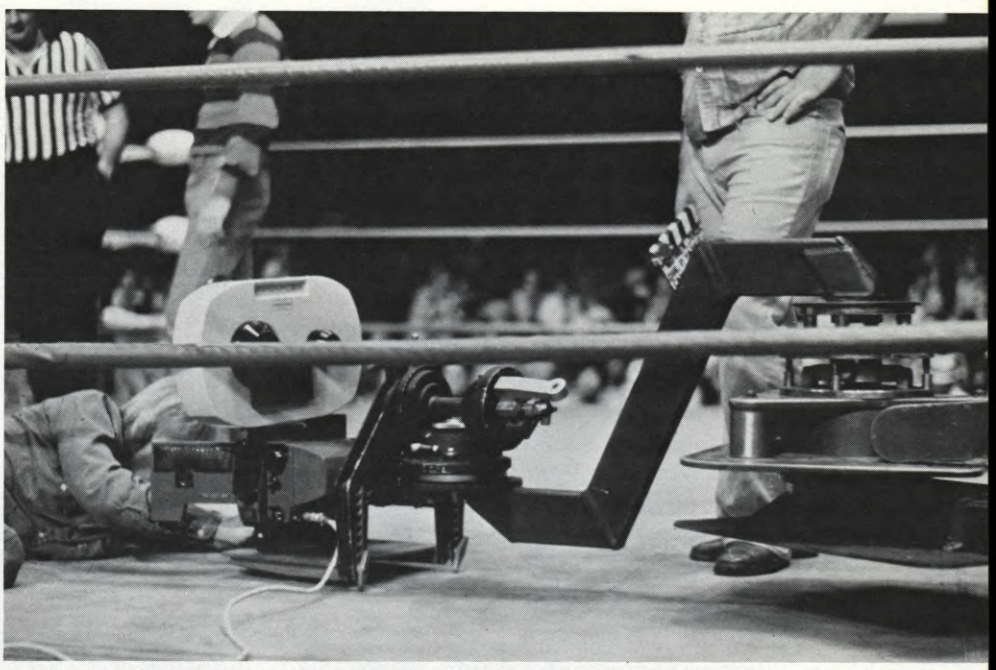
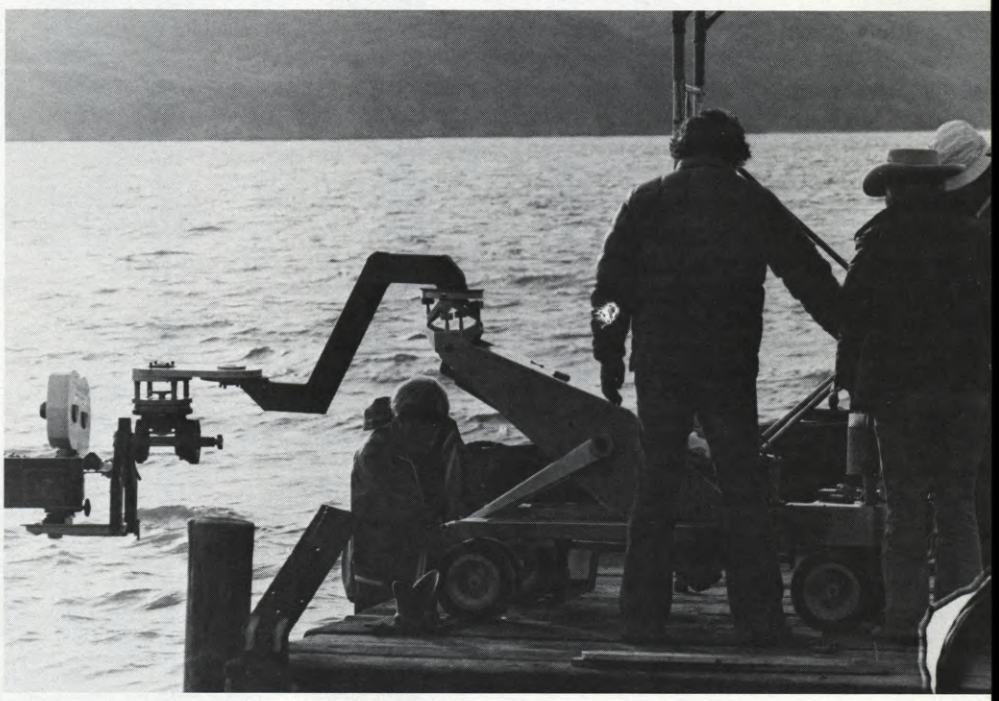


In PART I of this published seminar (see *American Cinematographer,* February, 1978), Woolsey speaks of his "table-scraper" rig, which he used to get stationary and moving shots at table hight. The rig, which he owns, is based around an O'Connor Model 200X tracking head, originally used at Cape Kennedy to film rocket launches. Involving no springs or torsion bars, the rig permits moving the camera fore and aft, up or down, on an adjustable platform to achieve perfect balance. Fluid adjustments are possible for pan and tilt. At its lowest position (ABOVE), it can place the camera practically on the floor, or it can suspend the camera in space (BELOW), when mounted on a dolly or crane. Woolsey had the rig modified by O'Connor to permit 360° movement.



teresting type of thing to do. There was the sequence I was talking about, where Jane Fonda disappears into utter darkness, but there were two other firelit sequences, as well. There's one later on which shows Jane and Jason Robards sitting by another campfire, with a tent and the lake in the background. In that case, it was important to keep the background always in view, so that one was conscious of the lake, conscious of the trees, conscious of the fading light. There's a third sequence that shows Jane and Vanessa Redgrave as girls sitting by a campfire. That sequence was played for dusk effect, but once again, one actually deliberately went for the majesty of the mountains in the background. One wanted to capture the feeling of a communion with nature, if you like—of two lovely young girls who'd found themselves, found friendship. It was all part of nature, so I felt that one had to show nature. I didn't want to throw that away and just have it go into blackness. There were three separate firelit sequences and I like to think that all three had very different moods.

QUESTION: There are in the film a number of dusk sequences and night sequences showing practical lights. Speaking technically, were you sort of working at very wide apertures in order to bring the practicals up?

SLOCOMBE: It varied somewhat. There were times when one was shooting at the turn of day, with a fairly low light source in the house. There were other times when one would shoot actually in the middle of the day—in other words, shooting a proper day-for-night—in which case, of course, the window lights were boosted enormously to achieve the right balance. That's a fairly normal technique and there were a number like that. Then there was a series of scenes in Paris where Jane Fonda, together with Hal Holbrook and Rosemary Murphy (playing Alan Campbell and Dorothy Parker), comes back from visiting a whole series of night clubs. They're slightly merry and we see them wandering through parts of Paris. Some of this was shot at turn of day, with street lights. Some we did at dusk. Then there were others done very early in the morning, but supplemented with lights, of course. There were other shots which, funnily enough, look exactly the same, but were done in the studios. One would often be reproducing in the studios, for various reasons, a shot one had done for real. Perhaps one needed to play a scene longer, but ran out of time due to traffic holdups or whatever.

Trains figure prominently in "JULIA" and a 1922 vintage steam locomotive was pressed into service to insure authenticity of these sequences. (ABOVE) The local railway terminus in Strasbourg (Alsace) doubled as the Berlin Station. (BELOW) In order to light this night scene of the steam train pulling out of the station, Slocombe utilized "every arc I could get my hands on. Every 10K, every 5K, every 9-light was put to use."

QUESTION: The mark of a great Director of Photography is consistency of effect. It's one thing to create an effect for a single scene, but it's very difficult to sustain it for a ten or twenty-minute sequence. Don't you agree?

SLOCOMBE: Yes, it is true actually that one of the major difficulties any lighting cameraman has is in making scenes match and maintaining consistency between scenes that are very often shot,

not only at great distances from each other, but sometimes months apart. The settings may vary from studio backgrounds to real location backgrounds. Very often a real location background is used for a different purpose. It might be something like an aircraft hangar instead of a studio, or it might be a garage that is used as a lady's bedroom. But one of the things I admired in all of the major American pictures through the years was how the Americans were always past masters at creating everything in the studio. At Ealing Studios, where I was brought up, we tried to follow the American pattern of doing everything in the studio. Looking back, I think that perhaps we went too far, because we never went out of the studio, as indeed the Americans did at the time. Now, of course, one's inclined to go out more and more, but one's background of being able to do everything in the studio helps with the various challenges one comes to grips with on any shot. One automatically sees a dozen different ways of doing it. You can see how you would do it in the studio; you can see how you would do it for real; or you can see how you could get the effect with very, very few bits and pieces. But no matter which alternative you choose, you must always be concerned with the problem of matching, of maintaining consistency from shot to shot.

QUESTION: And that problem becomes especially tricky when you are using nets, fog filters and so on. What sort of diffusion did you use on "JULIA"?

SLOCOMBE: None of what we shot involved, I imagine, simply a lens without anything on it at all. We nearly always had diffusion of some kind—usually nets, because I'm very fond of nets. I would use a wide variety of nets, including the Samuelson set. Every time I go to Paris I'm inclined to go to various ladies' underwear shops, and hope the people won't get the wrong idea when they see me buying sheer ladies' stockings and things like that. Back in England, I'm a great believer in Harrods for buying nets, too. I'm inclined to use them on most shots, but often very light ones. Usually I favor getting the effect I want by varying the contrast of the lighting, rather than the thickness of the net. I find that the variation of lighting contrast actually will very often create a much stronger effect than merely a change of net size will. Sometimes, also, I will use a low contrast filter or a low contrast filter in conjunction with a net. On the whole, I find that nets are more interesting.

QUESTION: You seem to draw assignments that involve considerable shooting aboard trains. Would you care to discuss the train sequences in "JULIA"?

SLOCOMBE: Yes, strangely enough, "TRAVELS WITH MY AUNT" and "JULIA" both had in common fairly long sequences which were supposed to take place on continental express trains—and in both cases, those sequences were shot in the studio. For all the train stuff in "JULIA" we never went into a real train. Every single shot aboard the trains was done in the studio sets. One interesting thing about Zinnemann is that he hates for anything to interfere with the actors. He hates for the actors to have to wait for any mechanical things. He feels that this disrupts their concentration, and for them to suddenly have to stop in the middle of a take because of some machinery letting them down is, to him, unthinkable. So when we realized that we had to do all of the train stuff in the studio, his first "bete noir" was the process which we call "back projection" in England—or "travelling back". He hated the thought of any form of process and made me promise actually that, if possible, I wouldn't use it. At first I wasn't sure that this approach would really be sufficient. I felt that there might be one or two day shots where process would be needed, but that for the night shots we could get away with just lighting effects. As it turned out, we shot the entire picture with no process whatsoever. All the effects that one sees outside the train were done with moving lights and even the day shots were made without recourse to any form of process background. Looking back, I'm sure he was right in maintaining that any strong backgrounds outside the windows would have detracted from the atmosphere inside—from the dramatic qualities of the scenes. I'm very grateful to him for having been rather strong on that point. I am sure it was justified.

QUESTION: Can you elaborate a bit on the effects that you did use outside the train windows?

SLOCOMBE: We were very lucky in that we had a very good special effects crew in the French studios and they made up for us a very efficient light tracking system which we were able to use outside the train windows. For the day sequences we used very primitive drums, combined with the conventional lighting effects one uses through train windows. Also, all of the train compartments in the studio were built on conventional rockers. However, these weren't always quite sufficient, so we shot a lot of the scenes with the camera suspended on rubber bunjies and the operator, Chic Waterson, literally holding these by hand.

QUESTION: What about the filming of actual train exteriors—in stations and so forth?

SLOCOMBE: A lot of sequences, of course, were shot in real railway stations. We shot in various stations in Paris, including the Gare du Nord and the Gare de l'Este, and we had trains at our disposal. We also shot in several stations in Strasbourg and England. So, all in all, we shot quite a lot of station mate-

As director Fred Zinnemann (foreground) works with the actors prior to shooting a hospital scene, cinematographer Slocombe (in background) studies his lighting pattern. He favors less, rather than more, lighting units for most scenes and often wishes, as banks of lights are being turned off after a "print" take, that he had thought to do that prior to filming the scene.

rial and the art department had to transform large sections of the stations to look like 1938. We had a lot of night shooting in these stations and, at times, we used conventional big light sources like Brutes, 10Ks and 5Ks and, at other times, FAY 9-lights and quartz lights. I'm quite a believer in using quartz lights on outside sets, despite my original upbringing with conventional spotlights. And I find that, during the day particularly, there are few things to beat a 2-kilowatt quartz unit with the dichroic filter.

QUESTION: Partly because of the several decades covered in the story line, "JULIA" seems to have a tremendous number of sets. As a cinematographer did you find that especially challenging?

SLOCOMBE: All of those sets gave me a very interesting time, because often there would be a montage that might include a night club, a bar, another night club, the opera house and various other scenes. Every one of those was just literally sketched in. The art department would give me just two curtains, one piece of wood going across and one table, and I'd be able to create a whole atmosphere with lights and things—perhaps a few candles. We came up with some lovely things and it was more fun to work with those than to have huge sets.

QUESTION: You say, "lights and things". When you are creating an effect, what do you rate as "and things"?

SLOCOMBE: Well, nothing special really—just all the sort of gobos and nets and funny things that every cameraman has on the floor. I find that whenever I walk onto someone else's set I'm always amazed at the forest that the cameraman appears to have erected around the camera, and it's only when I walk away from my own set that I suddenly find I've done a similar sort of thing. But I don't think any cameraman is conscious at the time of the funny forest he has erected, because he has done it bit by bit—but it's great fun to do.

QUESTION: Do you have a collection of your own personal bits and pieces that you take with you?

SLOCOMBE: No, not really. Some cameramen do, but I don't. The funny thing is, I suffer from the most terrible memory. My memory is so bad that I can never remember what I've done before. While I'm on a film, I can remember everything I've done, for matching purposes, and I can keep a mood and a consistency of lighting all the way through. I don't depend upon general memory for that; it's just the feeling at the time. But my memory would fail me very badly if I tried to remember an effect that I'd done on another picture. The funny thing about making pictures is that however much the story changes, every now and again you find yourself in the same situation—a Law Court, for example. In England our most famous Law Court is the No. 1 Law Court at Old Bailey. Every major crime seems to be tried there, and every English cameraman has done the No. 1 Law

(ABOVE) The set for Sardi's, as it appeared in the Thirties, was created by American Production Designer Gene Callaghan. To insure absolute authenticity, Zinnemann used only American extras (flying in 50 of them), claiming that Americans have distinctive dress and behavior patterns. (BELOW) Every photograph and caricature that was originally on the walls of Sardi's was photostated and repainted for mounting on the walls of the set.

Court at least five times in his career, and a lot of very distinguished American cameraman have done the same. Now, one would think that one would automatically know how to do this, having only to remember how he did it the last time. But actually I don't. Every time I go onto a set, I walk onto it as if I've never seen it before, and I just start from scratch without an idea in my head. But in a way, I think that maybe a bad memory is a blessing in disguise, because it prevents me from becoming lazy; it gives me a chance to think anew. That's why I feel that every picture I do comes out a little different—even though I don't try to make it different.

QUESTON: "THE GREAT GATSBY" and "JULIA" are both set in more or less the same period, yet they couldn't be more dissimilar. How would you define your basic differences in approach, in order to get the two totally different looks?

SLOCOMBE: It's true that both stories start off in the early Twenties, but I think that "GATSBY", on the whole, was a much "lighter" picture. I won't say it was a happier picture, because it also had the undertones of tragedy all the way through. But nevertheless, the tragedy was played against a high-pitched violin, if you like. The trappings of luxury were meant to be high-keyed and, therefore, there was a certain aura of luxury that one wanted to sustain all the time. Whereas, in this picture, even the luxury—the leisured money of Julia's grandparents and her mother's world—had a dull connotation, not to say a slightly sinister feeling, as well. Looking at it from that point of view, one always kept a rather low-key background.

QUESTION: Really what you're saying is that you employed a much higher lighting key in "GATSBY"—isn't that so?

SLOCOMBE: I won't say that the key—the ratio—changed that much. It was probably that there was a greater amount of highlight—put it that way. For me, these subtleties stem from the literary content of the original work. I must have done about a hundred pictures during my career and I've always been much more excited by a picture with some sort of literary content—going right back to "KIND HEARTS AND CORONETS" in the old Ealing days. That to me was a very literary and highly intelligent, very amusing script. In much later years, I found things like "THE LION IN WINTER" very interesting to read and, therefore, very interesting to work on. "THE SERVANT", directed by Joe Losey, once again had the literary content that enabled one to try to match it with light. "GATSBY" was another case in point, because it happened to be a literary classic. Finishing up with "JULIA", once more one was fascinated by the story content, and on every single shot, one would pause for a second and sort of think, "Now, what are we trying to say—and, therefore, what must I say? Must I play with the characters or against them?" I mean that sometimes the photographic image must go against the written one, and sometimes it goes with it. It's only if the story is good—if it has that literary content—that it gives you the excitement of trying to match what the writer and director have to say.

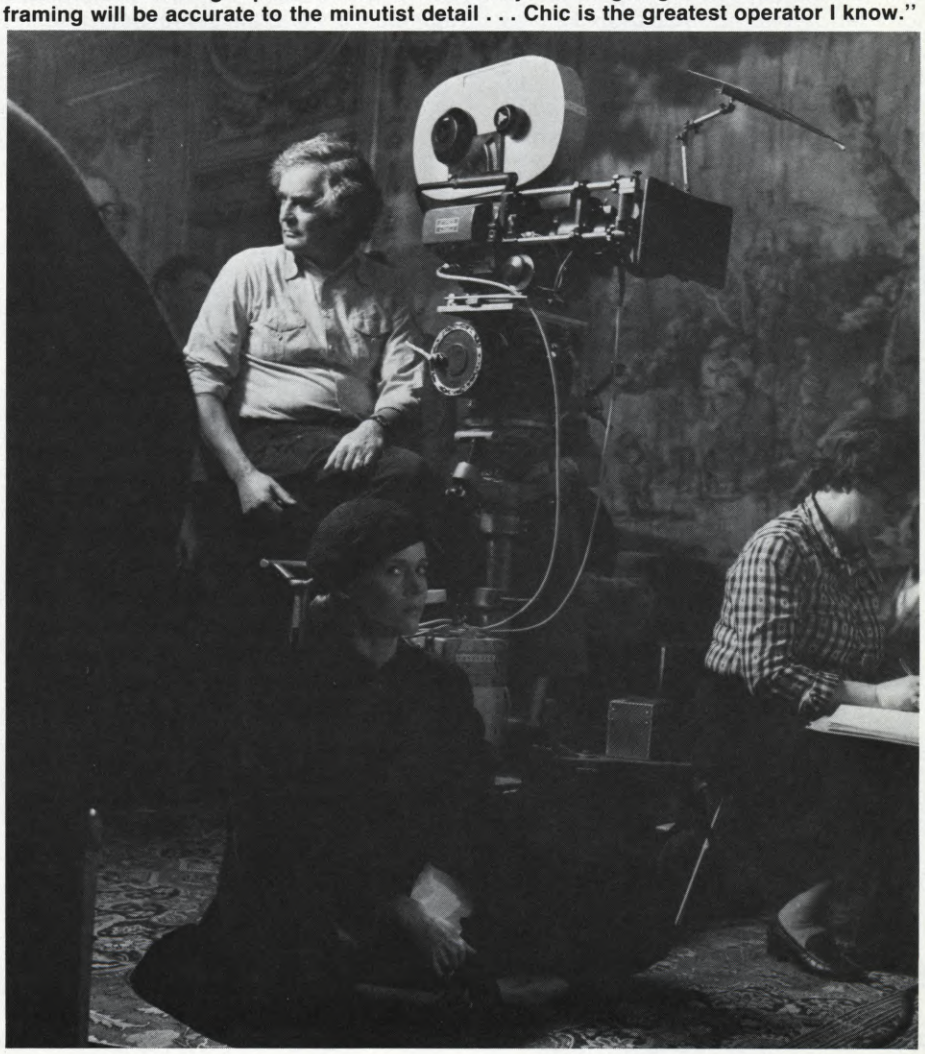
QUESTION: Your father was a great journalist and you started your working life as a journalist. Journalism is sort of deep in the land of your formative years. Does this come out in interpreting a story?

SLOCOMBE: Yes, I think it does. Actually, I was never a good journalist and I think that's why I was happy to give it up and find a career that gave me a greater opportunity to express what talents I may have, but I remember, from what my father instilled in me, that there was always this great feeling for a story—for getting to the meat of a story. He felt that every story had to have a beginning, a middle and an end. Also, the journalistic approach to news, for example, trained one to spot very quickly the important elements of a story, the salient points.

QUESTION: Do you feel that this ability is somehow valuable in cinematography, as well as in structuring a story?

SLOCOMBE: Very definitely. In that respect, I look back on some of my earliest pictures with horror. (In fact, one of the things I've got against television is that all too often it brings these skeletons out of the cupboard.) But in those early days, I remember walking onto a set and finding that the art department had given one all sorts of things—furniture all over the place, pictures all over the walls,

Operator Chic Waterson (behind the camera) has worked for almost 30 years with Douglas Slocombe, who says of him: "We have worked together so long that we hardly need to talk. One sort of sets things up and knows automatically that it's going to work, because Chic's framing will be accurate to the minutist detail . . . Chic is the greatest operator I know."



thousands of objects all over the set. One would light all these things very carefully and then, on the screen, one would suddenly realize that one could see nothing at all except a whole series of dots. Then came the realization that however perfect Kodak can make their film, however, marvelous the cameras and lenses made by Panavision and other companies, the screen can never show but a fraction of what the human eye can see. In the short time that a scene is on the screen, the eye can take in only a few things. I found actually that you've only got time to see one really definite thing and one subsidiary thing. Therefore, I find that the secret of any composition and the secret of any lighting approach is really to try to keep those things as simple as possible. I've noticed, in studying the paintings of the great masters, that even though their audiences have much more time to stand in front of a work and examine every detail of it, the greatest paintings are still the ones that catch you with just one or two very strong elements. I've always tried to keep to this—call it a form of journalism, if you like. I just try to tell the story terribly simply, and every time I forget that rule I regret it.

QUESTION: Early on in "JULIA" there is a sequence that takes place in the fantastic dining room of a manorial sort of Scottish castle. The effect is very lush, yet very spare. Would you say this is an example of the simplicity you've been talking about?

SLOCOMBE: Yes. In that instance, one tried for complete simplicity. There's just a table with literally four chairs around it and almost faceless attendants hovering in the background. The only really visible element, I suppose, is the overhead lamp casting its bleak light onto the table.

QUESTION: In that dining room sequence, the blacks we discussed earlier seem particularly rich. Did you do anything special to achieve that effect?

SLOCOMBE: No. I just kept as much of the light as possible away from unwarranted areas. I feel that in lighting for photography one can divide the importance between the light that you put on and the light that you keep away—and very often the light you keep away is more important than the light you put on. This is proved by something which has happened to me many times, and which I know happens to other cameramen too. For example, you will painstakingly light up a set and shoot a scene. At the end—after the director says, "Cut"—the lights will then start to go out, bank by bank—five lamps here, three lamps there and two lamps somewhere else. As the banks go out, one sort of looks at the set and realizes that, with every bank of lights that go out, the set looks more and more marvelous. The cameraman goes off with his tail between his legs, thinking, "Oh, my God—if only I'd seen that before." This has happened to me so many times that I've often wished there was another life in which one could start all over again and reshoot things that way—with only three or four of the lights on. One of the things I admire about Stanley Kubrick is that he is said to go round on the set sometimes turning off lights that the cameraman has put on. I don't know how much truth there is to the story, but I'd like to have the time to do that to my own lights.

QUESTION: Speaking of lights, I'm aware that you used two quite different types of lighting equipment on this picture—one in England and another in France. Could you tell me about that?

SLOCOMBE: For the shooting in England we used Mole-Richardson and Italian lights of conventional types.

QUESTION: Did you use any C.S.I. or H.M.I. units?

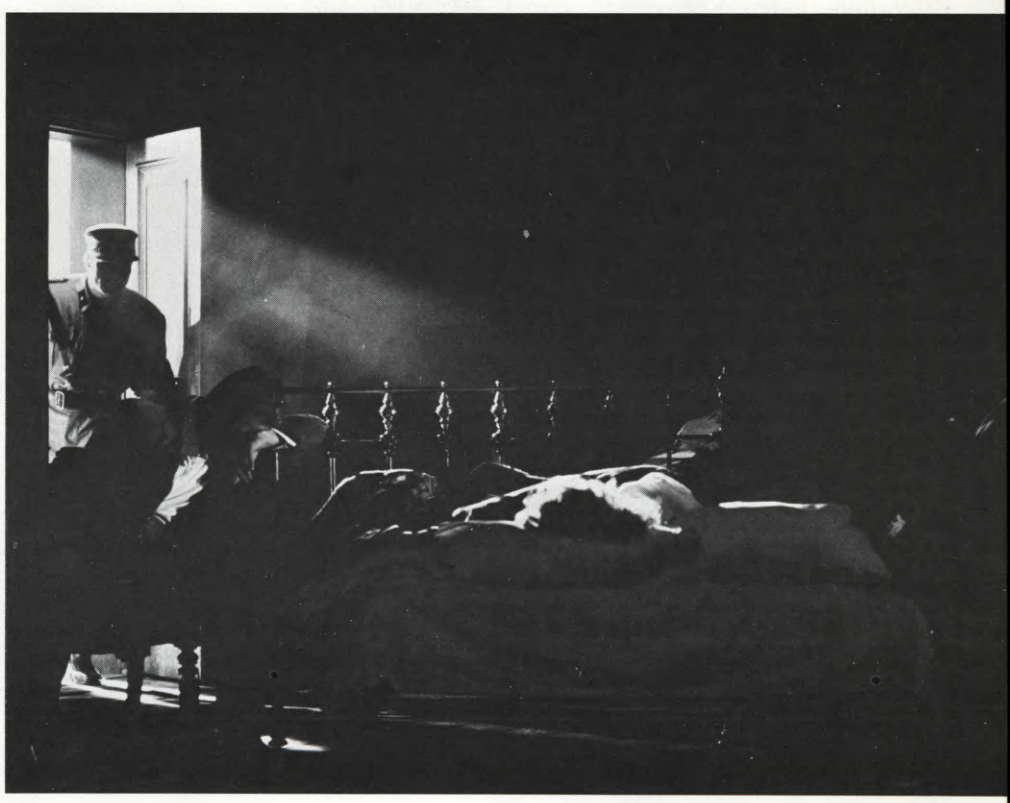
SLOCOMBE: No, I never used those—just the normal incandescent types of spotlights, as well as arcs. But later on, when we went to France, although the units were similar in that they were incandescent spotlights, they were of a very different shape and had very different qualities, as compared to the American types of lights that we use mostly in England. Not only that, but the rigging system used at the Studios de Boulogne was different. Every light performed in a different way. But it was interesting to use the two different types of lighting in the same film.

QUESTION: You said earlier that you are a firm believer in quartz lighting, especially with dichroic filters. Can you enlarge on that a bit?

SLOCOMBE: Yes. I find the quartz units very useful on location to supplement the normal 10Ks and things like that. But I must say that, on the whole, I like the old-fashioned spotlights in a way. I always feel that you can flood and diffuse spotlights quite easily, whereas it's much more difficult to control an ordinary quartz flood. Nevertheless, I do mix them to quite an extent on exteriors. As for the dichroics, even though I realize that blue gels are probably more consistent (if you've got the time to change them), the dichroics are much more economical, in the sense that they give you considerably more light. They give a slightly false color rendering—and it is one that differs a bit from lamp to lamp—but on the whole, I find them so useful that I'll put up with the slight discrepancy. Sometimes you can actually take advantage of it.

QUESTION: Relative to the subject of lighting, one of the big differences that always strikes me between the American Director of Photography and his European counterpart is the relationship with the gaffer. Have you noted that difference?

SLOCOMBE: Yes, there is a great difference. The Americans are inclined to work with a single gaffer over long periods of time. There's a sort of consistency of employment. I think the average American Director of Photography has a gaffer whom he knows and likes and who works with him from picture to picture and very often goes through years and years with him. The gaffer gets to know his techniques and one feels that, to a certain extent, the American Director of Photography can rely on him to sometimes rough in a set and certainly do the backgrounds and things like that. But in England that doesn't really work. First of all, our industry is much smaller than the American industry and I think that the average English gaffer, if he had to rely on working with any one particular Director of Photography, would probably starve to death; he certainly would with me. So they're inclined to go from cameraman to cameraman and, simply



because they have to follow different techniques, I don't think they could be of as much use to an English Director of Photography as they are to his American counterpart. For that reason, we don't ask any more of them than, at the very most, to light up a backing—and even then I think that one would want to follow it up. Each cameraman has his own likes and dislikes.

QUESTION: I've noted that there are three production designers credited on "JULIA". Was there any special reason for that?

SLOCOMBE: It was in line with Zinnemann's thinking (which I mentioned earlier) that the technicians of a particular country somehow know more about the idiosyncrasies of their own country than a foreigner would. Of course, one knows that skilled technicians of almost every country can reproduce the things that belong to another country. A perfect example of that is Hollywood, where the atmosphere of every country in the world is reproduced in some picture or another by Hollywood personnel. But to answer your question, for the sequences that supposedly took place in America, there was an American production designer, Gene Callahan, who was marvelous. For the English sequences, there was an English lady, Carmen Dillon. For the sequences shot in France, there was Willy Holt, a very distinguished French production designer.

QUESTION: I doubt whether anyone anywhere, even in New York, could have reproduced Sardi's to look more like Sardi's. Do you know who designed that set?

SLOCOMBE: Gene Callahan. One of the reasons why he was brought over from America was to design Sardi's, and he did it marvelously. It was typical of Zinnemann again that once Gene had designed the basic set for Sardi's, every photograph and drawing that was originally on the walls at Sardi's was photostated and repainted and put up on the walls of our set. Not content with that, Zinnemann actually insisted that we fly over as many American extras as possible to fill the tables, so that, in fact, we had an American crowd. We drew some of them from the American contingent living in London, but brought in at least 50 more from the States to give it an authentic look. In actual fact, he was quite right, because, although one's first reaction was that these people were only in the background, there is a certain way that the Americans dress, the way they sit, the way the American women, particularly, have their own very smart little chic and their hair always beautifully groomed. Even an American man's hair is much better groomed than an Englishman's, you know. Somehow, just every aspect of their clothing and their behavior is very, very different, and Zinnemann insisted on having all that authentic. It seemed like a rather expensive way to prove his point, but it paid off.

QUESTION: Would you say that Zinnemann's preoccupation with authenticity directly affected you as a cinematographer?

SLOCOMBE: I rather think it did. That sort of attention to detail on his part made every one of us take all the more care in what we were doing. He made us somehow stand back and criticize ourselves more precisely. I don't think that one let up for one second on that picture. It was not a "relaxed" picture from that standpoint, because I think all of us were on our mettle all the time—but it was extremely interesting.

QUESTION: Every picture has its props, but in "JULIA" you had the greatest props of all, those great big steam trains pulling out of railway stations. Did photographing them present massive problems?

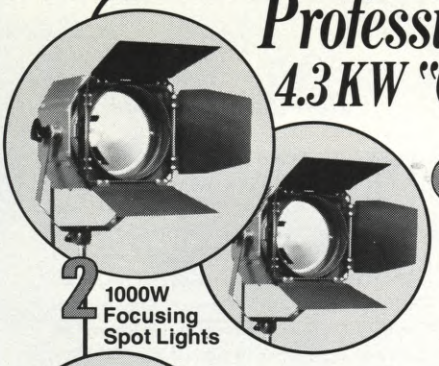
SLOCOMBE: First of all, it's often been said (mostly in reference to the director) that to make a film is to have the biggest box of toy trains that anyone can have. For a cameraman, obviously, the steam train is a wonderfully visual thing to work with. It must be the most beautiful and visual of all the moving mechanical things. I don't think that even the modern rockets have the impact or majesty that a steam engine has—and anyway, one loves the steam. However, steam trains are very expensive toys. They cost a fortune per day, so one doesn't have them for any length of time. We had one for two days and one night in Strasbourg and shot it steaming majestically out of the station—once in a very wide shot and again fairly close. Of course, it was a very big lighting job. It meant using every arc I could get my hands on. Every 10K, every 5K, every 9-light was put to

Continued on Page 320

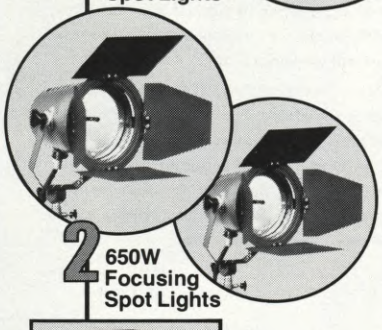
Professional Five-Light 4.3 KW "Quartz" Lighting Kit

CP/PRO-KIT

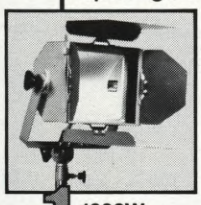
. . . for Studio and Location Lighting



2 1000W Focusing Spot Lights

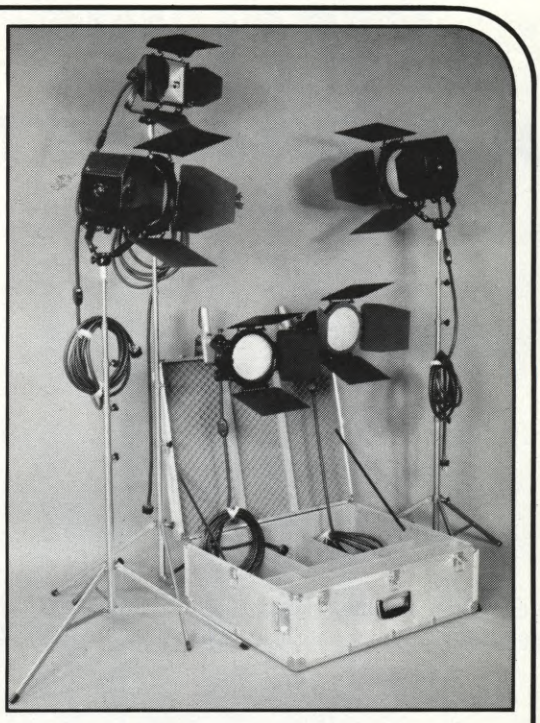


2 650W Focusing Spot Lights



1 1000W Fill Light (Broad)

The CP/PRO-KIT offers maximum versatility and portability for both studio *and* location operation. It includes: ☐ Two *focusing* 1000-watt spot lights and two *focusing* 650-watt spot lights (all four above luminaires supplied with *detachable* rotating four-leaf barndoors) ☐ One 1000-watt fill light (broad) with *integral* four-leaf barndoor ☐ Four diffusion frame holders with spun glass ☐ Two gaffer grips ☐ Three professional-type stainless steel light stands ☐ Five 15 ft. three-wire cables ☐ A sturdy aluminum carrying case, measuring only 26″ x 20½″ x 9¾″. CP/PRO-KIT *total weight:* 69 lbs.



For further information, please write to:

cinema products CORPORATION

Technology In The Service Of Creativity

2037 Granville Avenue, Los Angeles, California 90025
Telephone: (213) 478-0711 ■ Telex: 69-1339 ■ Cable: Cinedevco

HOWARD A. ANDERSON CO.

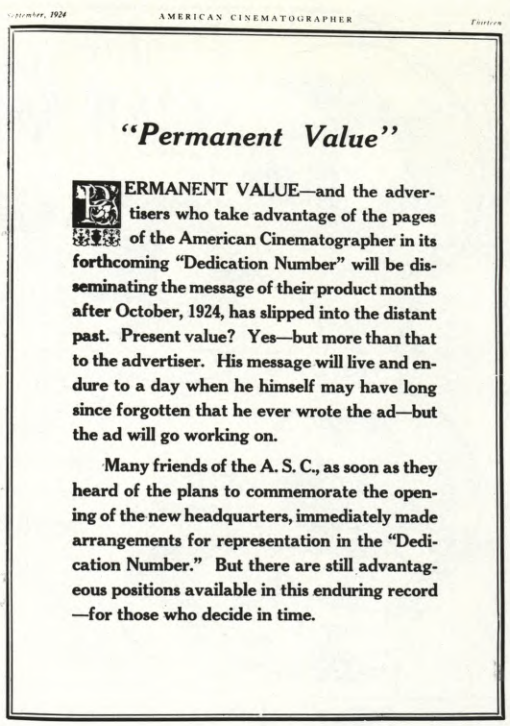
CREATORS OF DISTINCTIVE IDEAS
AND DESIGNS FOR
SPECIAL PHOTOGRAPHIC EFFECTS FOR
MOTION PICTURES AND TELEVISION

TITLES · GRAPHICS · MINIATURES
BLUE BACKING · INSERTS
MATTE PAINTINGS · OPTICALS
SPECIAL UNIT PHOTOGRAPHY

Main Office: PARAMOUNT PICTURES
5451 Marathon Street, Hollywood, Calif. 90038
(213) 463-0100

ADVERTISING: A PERMANENT VALUE

By THREE TYLER



"Permanent Value"

PERMANENT VALUE—and the advertisers who take advantage of the pages of the American Cinematographer in its forthcoming "Dedication Number" will be disseminating the message of their product months after October, 1924, has slipped into the distant past. Present value? Yes—but more than that to the advertiser. His message will live and endure to a day when he himself may have long since forgotten that he ever wrote the ad—but the ad will go working on.

Many friends of the A. S. C., as soon as they heard of the plans to commemorate the opening of the new headquarters, immediately made arrangements for representation in the "Dedication Number." But there are still advantageous positions available in this enduring record —for those who decide in time.

Advertising is educational and informative as well as an effective sales tool in an extremely competitive market

Not too many months ago, Mr. Charles G. Clarke, ASC, came into my office to ask if I had any information regarding the date of the introduction of a camera to the public. Mr. Clarke is somewhat of an historian and also curator of the small but interesting museum housed at the American Society of Cinematographers clubhouse. At that time he was researching the advent of sound-on-film, which had been introduced and used on a novelty basis long before it became popular and practical, for another paper he was writing.

I told him that I didn't have anything in the reference cards on my desk (I have been cataloguing the old issues for easy reference), but that we could go through some of the oldest *AMERICAN CINEMATOGRAPHERS* and see what they had to say. Our library has bound volumes back to 1924.

The problem seemed to be that we would have to read through the various stories in the old issues to see if we could find either a technical article introducing the equipment or a reference to it in one of the many production stories included in the magazines. However, while paging through the old volumes, we ran across an early advertisement of the equipment in question. You know, an *advertisement,* one of those marvelous things with big type and pictures which told us, at a glance, when the manufacturer had first introduced his product to the market.

All this activity started me reading the advertisements in the magazines from their historical standpoint and I was intrigued by the wealth of miscellaneous technical information I was able to glean from the material: "Eastman film, both regular and tinted base, is available in thousand-foot lengths." ". . . the Kinamo is fitted with scene punch, footage indicator, removable film gate and one stop movement;" and "Speed, flatness of field and critically sharp definition are features of this perfect lens. . ."

Subsequently, I began to give the present day advertising more careful scrutiny, rather than the cursory reading I have done in the past, wherein I have only observed the product or service and the model numbers and/or prices.

As I have read our advertising more carefully, I have come to the realization that a great deal of it is not only valid as a sales piece for the manufacturer, but that it also enhances the editorial content of the magazine. Most of the advertisers have taken on the role of educator and, aside from specifications and a sales pitch, fill their advertisements with interesting bits of miscellaneous information which enlarges the body of knowledge of the average reader of this publication. This observation prompted me to read all the ads in our magazines (old and new) and I, as I have read the advertising more closely, have found that our present-day advertiser is just as eager to play the role of educator today as he was more than half a century ago.

This phenomenon illustrates the reason why I have been told, over the years, that our readers peruse the advertising material in *AMERICAN CINEMATOGRAPHER* as assiduously as they do the editorial copy. Time and time again I have been told, by the advertisers themselves, that the response to their advertisements has been most gratifying and astounding.

Although we do not have a "bingo"-type reader response card in our publication, our reader response through phone calls and written correspondence has been uniquely gratifying, and has had the added advantage of showing direct interest in the product rather than possibly being a mere fishing expedition for general literature. A reader who will take the time to write a personal letter or make a phone call is a reader who is really interested in the advertiser's product.

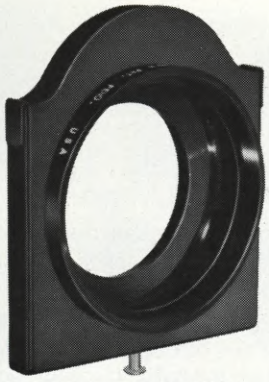
One of our advertisers was able to tell us about the postal delivery pattern of our magazine by the kinds of responses he received from the subscribers of the magazine. He told us that as our magazine was delivered to different parts of the country and different parts of the world, he began to receive mail from these various areas.

Editorially, we, ourselves, have found the advertisements in our magazine a great source of information when we are researching material for stories. As our editor travels to different parts of the world to get stories for our pages, he interviews cameramen and production personnel from many countries. When he comes home, he turns this material over to me to transcribe so that he can

Continued overleaf

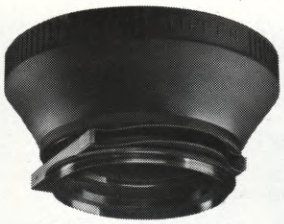
TIFFEN

THE WORLD'S FINEST PHOTOGRAPHIC FILTERS.



PROFESSIONAL FILTER HOLDER

Holds square glass, gelatin and round series-size glass filters—separately or together. Permits accurate alignment of oblong or square lens shades. Filters are held firmly in holder by side clips—ejection pin in base facilitates removal. Available for 3 or 4 inch square and series 7, 8 or 9 round filters. Holders will easily mount on your lens with standard adapter rings.



PROFESSIONAL SQUARE FILTER HOLDER WITH COLLAPSIBLE RUBBER LENS SHADE

Holds square glass, and series 9 round filters, separately or together. Filters are held firmly in holder by side clips, ejection pin in base facilitates easy removal. Available in 3x3″ or 4x4″ square size, in 72mm, 86mm, and series 9 thread size. Also supplied with standard or wide-angle collapsible Rubber Lens Shade, please specify when ordering.

RECTANGULAR FILTERS

For Arri 16 matte box. Available in all colors, neutral densities 0.1-1.0 and effects filters.

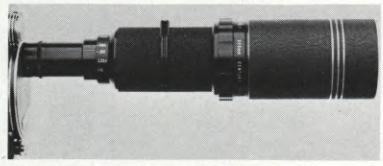
TIFFEN FORMULA 712 LENS CLEANING KIT

Especially formulated for cinematographic use, Formula 712 may be used effectively and safely on all glass or plastic optics including the finest coated lenses and filters. The reuseable snap-closure vinyl case contains one 1 oz. bottle of cleaner-defogger and one packet of lint-free lens tissue.

TIFFEN

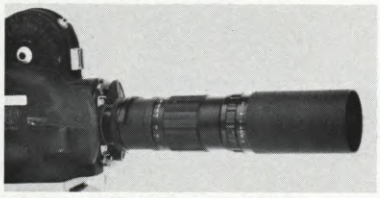
71 Jane Street, Roslyn Heights, N.Y. 11577
(516) 621-2700 Telex 96-7748

SUSTAINING SMPTE MEMBER / Member Professional Motion Picture Equipment Association pmpeo

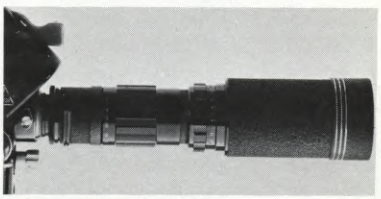


300mm f/4.2 standard CTA
An ideal complement to the standard zoom lens, this model is perfect for general purpose cinematography up to 35mm cine. It's light weight allows it to be used without a bracket in many instances. Minimum Focus 30 feet.

3X300



300mm f/4.2 CTA II
For use in all motion picture and video formats up to 35mm cine; this lens combines all the features of the standard Tele-Athenar with extreme ruggedness; it offers an interchangeable mount system and utilizes the same mounts as Tele-Athenar II systems. Minimum Focus 15 feet.



300mm f/3.2 CTA II
This lens is usable in formats up to and including double frame 35mm still; it is especially recommended for low light level high speed applications. Minimum Focus 20 feet

We manufacture a complete line of telephoto lenses from the 150mm f/2.8 to the 1200mm f/6.8. Write or call for a free catalog.

Member Professional Motion Picture Equipment Association pmpeo

Century precision cine/optics
A DIVISION OF CENTURY PRECISION INDUSTRIES, INC.

10661 BURBANK BLVD. NORTH HOLLYWOOD, CALIFORNIA 91601 TELEX: 66-2419/(213)766-3715

Ica Kinamo

THE ICA KINAMO may be rightfully designated as a semi-professional motion picture or cine camera—professional for the reason that it uses standard size film, its capacity being eighty feet, ample for news, educational and industrial features. The used roll can be removed and a new one inserted ready for use within less than thirty seconds—a professional necessity.

The lens is the Carl Zeiss Tessar f 3.5, the lens with which the best feature films have been made. It is fitted with the Zeiss focusing mount, with distances in feet and diaphragm markings.

Like the better professional cameras, the Kinamo is fitted with scene punch, footage indicator, removable film gate and one-stop movement.

It is professional in its construction, and the easily operated, quiet running mechanism is characteristic of the best professional cameras.

Its size over all is 2¾x5½x6½ and it weighs but 3¼ pounds.

Each Kinamo is furnished with a substantial tripod. The price of the Model "A", accommodating 50 feet of film, is $125.00, and the "B", having capacity for 80 feet, is $135.00.

The Kinamo is sold by leading camera dealers. Write for the Kinamo catalog and let us know motion picture requirements.

HAROLD M. BENNETT, U. S. Agent, 153 West 23rd street, New York

AMERICAN CINEMATOGRAPHER April, 1924

tal Model Debrie Professional Camera

automatic dissolving shutter
glass attachment for focusing
ifying tube for direct focusing
rice
m and 105 m/m Zeiss lenses fitted for camera
ed-foot magazines
for magazines
masks
e masks
ks

brie tripod with quick tilt and for tripod

Complete Outfit $1250

ER IN NOW WHILE THIS PRICE IS IN EFFECT

on Picture Appartus Co. Inc.
8 West 44th Street New York City

S. AND CANADA AGENTS FOR DEBRIE

AMERICAN CINEMATOGRAPHER Twenty-three

AUTOMATIC CINE CAMERA AND PORTABLE CINE PROJECTOR

Now On Display

At Our Branches and at Leading Dealers Everywhere

Immediate Deliveries

See them at our offices:

6329 Santa Monica Blvd., Hollywood.
220 W. 42nd St., New York.
1821 Larchmont Ave., Chicago.
Write for descriptive catalog

You get what you see with the Filmo Automatic

Outstanding and Exclusive Features

FILMO CAMERA
Weight—6½ lbs.
Size—7x6x8-in.
Shutter—216°
Lens—F 3.5 Cooke Anastigmat.
Tripod—None required.
Viewfinder—Like a binocular—"What you see you get."
Quality—B & H Standard.
Price—$185.00 including tax.

FILMO PROJECTOR
Weight—9 lbs.
Size—Folds in case 8x11x11-in.
Shutter—216° High Speed.
Lens—Universal Mountings for all focal lengths 1 to 4-in.
Movement—9 to 1.
Forward, Reverse, Stops for Single picture, Air Cooled.
Quality—B & H Standard.
Price—$175.00.

BELL & HOWELL CO.
1801 Larchmont Ave.
CHICAGO
New York Hollywood

Filmo Portable Cine ector ready for work or pleasure

AMERICAN CINEMATOGRAPHER Twenty-five

IFIED
ISING
word. Minimum charge
d and must reach us before preceding publication.
DVERTISING
ATOGRAPHER,
Y BUILDING,
CALIFORNIA

CTURE CAMERA
ll & Howell cameras and equipment. Guaranty Bldg. Granite 4274.

nd tripod. Lenses and mounts not nical conditions are chief require- lew York, N. Y.

AMERAS
h extra magazines, carrying case, Universal camera, built-in dissolve, Burke and James tripod, $525.00. Rolo, N. Y.
a; Color Filter; Case; Six 100-ft. Price $275.00. All Brand New.

ENSES
for Mitchell; one two-inch Bausch mm. F.2.9. Georges Benoit, 845

Howell mount. Dan Clark, care

ll & Howell mount; price $50.00. ilding, Hollywood, California.

AMERAS
complete. 170-Degree Shutter.

Dignity
in
Advertising

Espousing the aesthetic as well as the practical progress of the art of cinematography, the American Cinematographer has, through the prestige of its advertisers and contributors, gained an enviable place in the realm of dignified advertising.

The psychology of dignity in compelling attention which directly breeds the confidence of the reader is evinced in the high grade 'copy' which is the consistent characteristic of the advertisers using the American Cinematographer in the field of cinematography.

The advertisements in the montage (LEFT) were selected from the pages of very early volumes of AMERICAN CINEMATOGRAPHER. If you look carefully some of the date lines are visible in the illustrations. The advertisement on the first page of this article appeared as a "house ad" in 1924.

edit the material for our magazine. Because of the divergences in accents and colorations in meanings of words, it has been very helpful to me to be able to look at product ads through the years to help me to understand what the interviewee is discussing. I have been able to make statements clear during my transcriptions, rather than having to cope with laborious researching and phone calling later on. It is also interesting to note that about the same time new products crop up in our interviews, they have recently been dealt with in our advertising pages. Familiarity with the data has eliminated costly and time-consuming corrections, since it is very easy to hear one wrong word which will take the transcriber off into totally different dimensions in an interview.

Many advertisers have almost entirely devoted their advertising to a kind of *editorial content* and have aired problems and controversies, discussed techniques and crystallized the thinking of others by carefully explaining their viewpoints in paid space. These "editorial"-type advertisements have argued the advisability of changing formats, have pointed out the advantages of the use of new techniques and equipment, and have clarified the thinking of users of other techniques and equipment. Some of this information can become quite controversial.

A trade publication, aimed at the professional user, is an ideal format for "editorial"-type advertising. It is a form of "hard-sell" that can only be understood by the individual who makes a living by using the products and services advertised in our pages. Because the trade advertiser is not selling to the uninformed general public, but to specialists in the field who are well qualified to judge products, there is little room for hyperbole, let alone inaccurate claims in advertising.

On the whole, it is evident that the advertising in *AMERICAN CINEMATOGRAPHER* is very important, educational and informative, not only to the reader but also to the competitive advertisers in the magazine and to the editorial staff of the publication. ■

An exceptionally long of gradations comb with fine grain, high s and excellent color se tion, makes

DU PONT

Announcing the New Mitchell Silenced Camera

Superiority...

TYPE 324 INTEGRAL INKIE

AMERICAN made motion pictures dominate the entertainment field throughout the world because of superiority . . . superior stories; superior sound, superior cinematography, superior film, superior laboratory equipment and superior lighting . . .

MOLE-RICHARDSON, INC., take pride in the fact that they have played such a big part in this achievement. SUPERIORITY and M-R EQUIPMENT are SYNONYMOUS in the motion picture industry because superiority is the watchword of our entire organization. When you buy a Mole-Richardson Lamp you get superiority.

IF IT ISN'T AN M-R IT ISN'T AN INKIE

MOLE-RICHARDSON, INC.
Studio Lighting Equipment
941 N. SYCAMORE AVENUE
HOLLYWOOD, CALIFORNIA

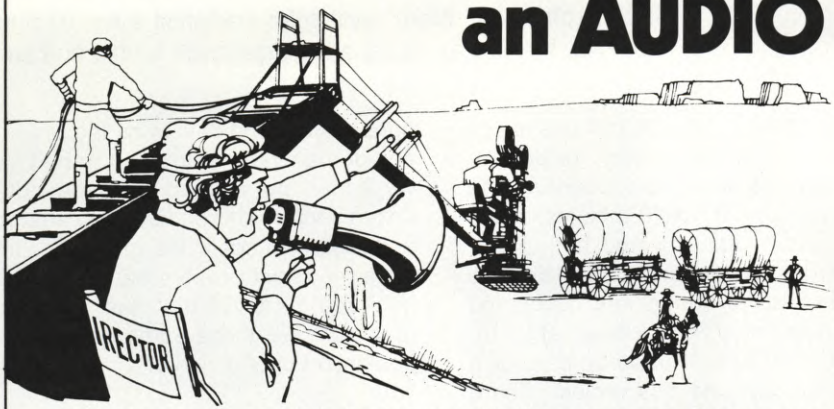
Since the *Final Verdict* Of the Cinematographer's *Art* Comes From the *Public*

And Since the Public See *Only the Print*

Isn't It *Apparent that the Prints* Should Be Made With the Cinematographer's *Cooperation* And *Advice* In Hollywood?

Standard Film Laboratories

Cue a cast of thousands with an AUDIO megaphone.



Shooting outdoors on location, with the expanse of desert or mountain in the background and a big cast of actors to control...requires infinite skill and patience on the part of any director. With a powerful, transistorized AUDIO megaphone, actors and crew will hear your every command, in clear, undistorted tones. Write for free catalog and name of your nearest quality Audio dealer.

AUDIO HAILER
Model S-168M
Rugged anti-feedback construction. Pistol grip with trigger switch. Easy volume control. Over 3000 10-second messages on 12 "C" batteries. 5 lbs. Two-tone blue.

SUPER HAILER
Model S-183
Watertight and shock-resistant for use hand-held, or as a portable public address system. Forest Green with shoulder strap and detachable mike.

AUDIO EQUIPMENT

Division of Walter Kidde & Co., Inc.
706 Forrest St., Charlottesville, Va. 22901
Telephone (804) 977-8050

Kidde

NEW AND IMPROVED • NEW AND IMPROVED • NEW AND IMPROVED •

THE FILMING OF "JORDAN: PAST AND PRESENT"

Shooting a triumvirate of documentary films in a country rich in history, culture and exotic local color presented a few technical problems, but also an exhilarating experience for the film crew

By DAVE McMILLAN

"Good morning, ALIA, Royal Jordanian Airlines."

"Mr. Dimachkie, please."

"One moment, please."

A few moments go by.

"Hello, Mr. Dimachkie here."

"Mr. Dimachkie, this is Dave McMillan from Universal. I'm with a film crew that is en route to Jordan and I'm just calling to confirm our reservations on tomorrow's flight to Amman. There should be reservations for myself, John Monsour and Michael Tomack."

"One moment and I'll just check."

More moments pass.

"Mr. McMillan?"

"Yes?"

"Mr. McMillan, I'm sorry, but we show no reservations either for you or Mr. Monsour or Mr. Tomack on tomorrow's flight."

That comment was met with stunned silence at my end of the phone. This really wasn't what I wanted to hear at 9:00 a.m. after little sleep on the ten-hour flight from Los Angeles to London. It was going to be a long day and this hotel bed I was sitting on looked awfully inviting.

Well, it took some fast talking to convince Mr. Dimachkie that he should contact the Jordanian Ministry of Tourism in Amman. By noon, the reservations were pretty well straightened out. It seems that bureaucracy, that common element linking all nations, large and small, was the culprit in this case. The Ministry had merely neglected to inform ALIA that we would be flying with them, courtesy of the Jordanian government. They also neglected to tell ALIA about the 1,200 pounds of equipment that was to accompany us on the flight, including a Tyler Mini-Mount (about 200 lbs.) which we were renting from Samuelson's in London.

When informed of this, Mr. Dimachkie, after a long silence, said: "Impossible!" After which followed more fast talking. By 5:30 that rainy afternoon, after personally walking a lot of paperwork through customs, the equipment was safely in the hands of ALIA.

And so, this co-production between the Jordanian government and Universal's Commercial/Industrial Film unit (UCIF) was off and running. The project encompassed three documentary films whose purpose was to inform American audiences that there is more to Jordan than just desert and camels.

The first film, about 30 minutes, gives an overview of the country: its people, economy, its land and history. The second, about 15 to 20 minutes, deals with Jordan's industry and agriculture. And third, a 10-minute theatrical short to be blown up to 35mm and distributed throughout the U.S. by Universal.

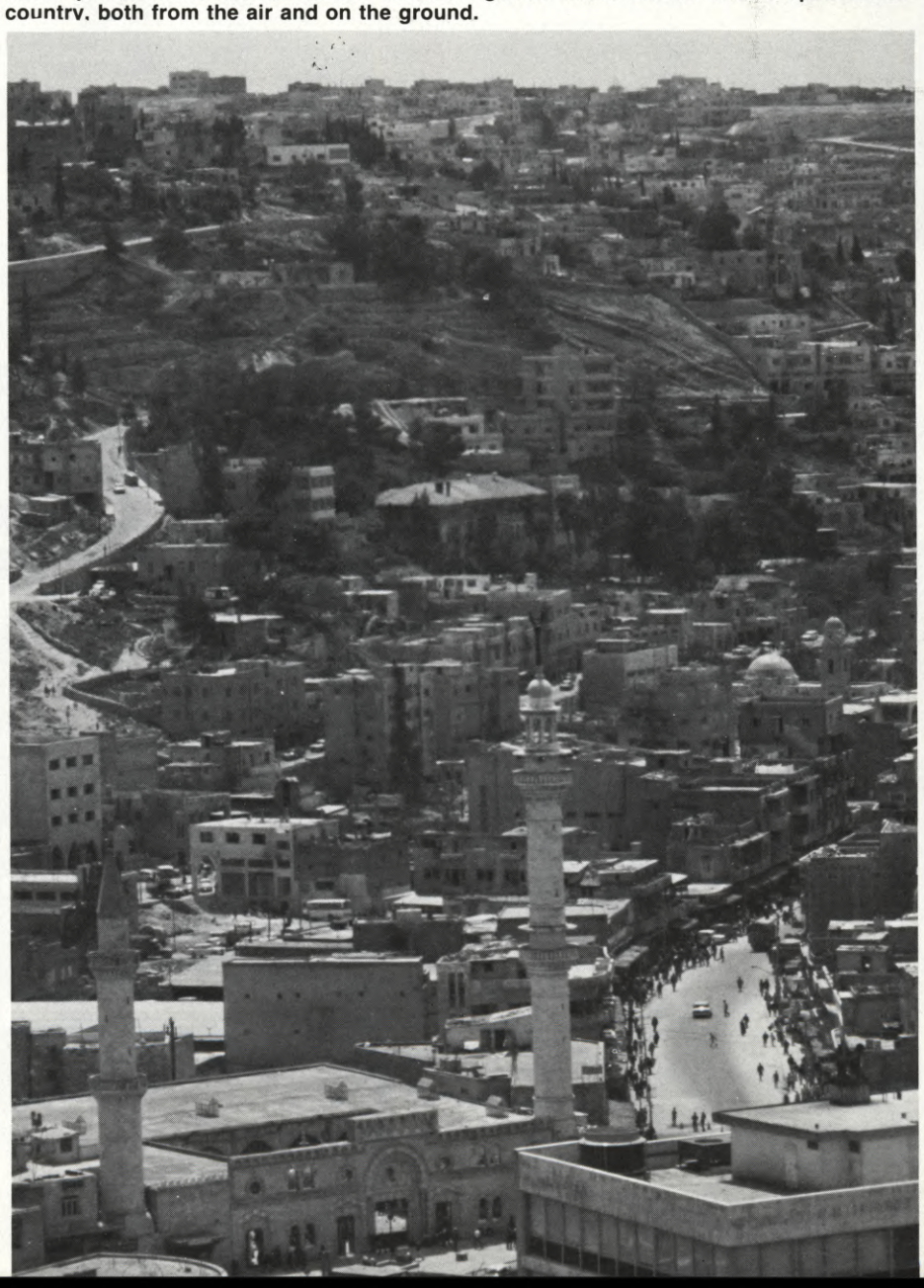
UCIF sent four of us to Jordan for a month to complete this project. There were, beside myself as cameraman, John Monsour as second cameraman (who also did sound and lighting when needed), Jim Greer as production manager and Mike Tomack as director.

We were supplied with people to act as grips, gofers and drivers by the Ministry and Jordan Television. As it turned out, we ended up with an entourage of a dozen people. This had both advantages and disadvantages. It's difficult setting up a tripod with twelve hands trying to help you do it. On the other hand, it's great to have those same hands carry equipment up the side of a mountain for you.

Our first day in the country was spent in orienting ourselves, unpacking and meeting people. In addition to these formalities, John and I checked out all the equipment after the long trip. In addition

Continued overleaf

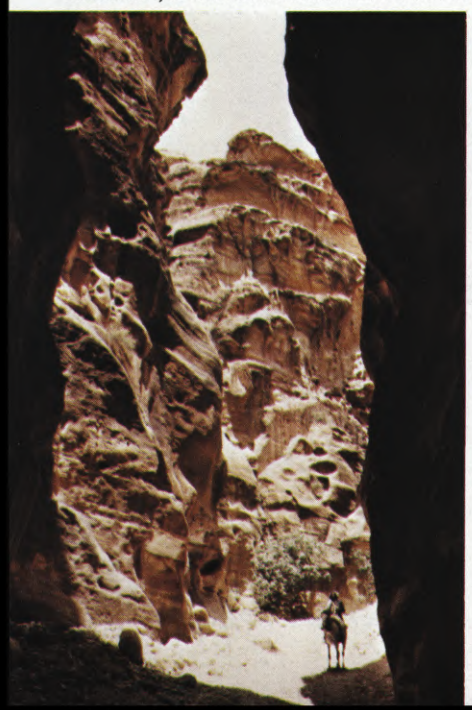
The central mosque in the Jordanian capital of Amman, built on the site of the ancient Roman city of Philadelphia. To the right of the Mosque is the entrance to Amman's central marketplace, known as the "souk". The filming crew found Jordan to be a spectacular country, both from the air and on the ground.

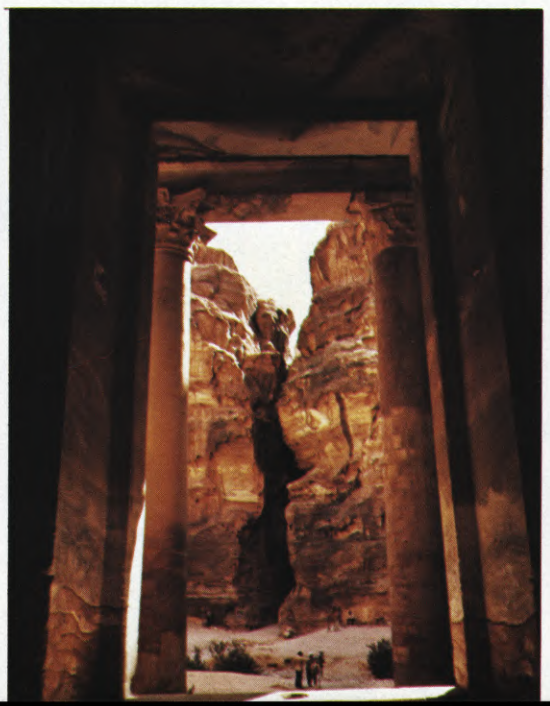


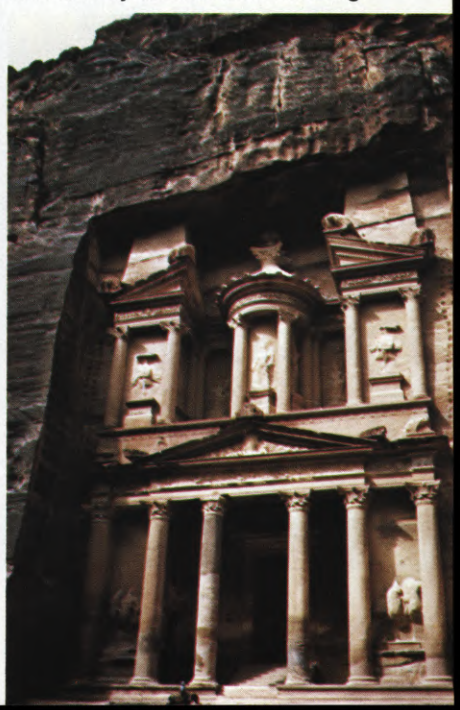
(LEFT) From the air, the ancient origins of the Jordanian capital city of Amman are clearly visible, as note the Roman amphitheater in the center of the photograph. The Roman city of Jerash, built during the 1st Century A.D. has only recently been uncovered, after having been buried for almost 2,000 years. Among the larger structures excavated were a classic amphitheater, a large Forum surrounded by columns and the Temple of Artemis. (RIGHT) The author, cameraman Dave McMillan, films aerial scenes of the Jordanian mountains from a helicopter.

(LEFT) Ed-Deir (The Monastery), carved from a solid sandstone cliff in the ancient Nabataean city of Petra, dating back to between the 2nd and 1st Centuries B.C. Note the scale indicated by the man at the entrance. (RIGHT) Some of Petra's dwellings, carved into the sandstone cliffs more than 2,100 years ago, are still used as homes for some of Jordan's desert nomads, the Bedouin.

(LEFT) The "Siq", a narrow, winding defile between rock cliffs that tower as high as 300 feet, leads into the ancient city of Petra. (CENTER) Inside the Treasury, looking back toward the Siq. (RIGHT) Il Khazneh (The Treasury), Petra's most spectacular and best preserved structure, is carved in relief out of the solid sandstone cliffs. Note the scale, as indicated by the boy on the donkey in front of the building.







to the 50,000 feet of film stock we brought, our equipment inventory included two Eclair NPR's, five 400-foot magazines, a Nagra III (complete with mikes and cables), two complete Lowel Tota-Light kits and an array of Angenieux lenses that included the 9.5-95mm, 12-120mm, 9.5-57mm, 5.9mm wide angle and a 25mm f/0.95. In addition, I brought along my 200mm f/4 Nikkor lens and 500m f/5 Nikkor reflex mirror lens.

John and I checked the cameras and lenses thoroughly by shooting tests from our hotel room balcony. We had the film processed that same day at the television station. We were obliged to shoot all the tests using EF rather than ECO because the station only used and had processing facilities for EF.

The following four days were spent in helicopters filming what seemed to be every square foot of Jordan from the air. The Jordanian Air Force supplied us with two French Alouette six-seater helicopters. We were initially viewed with some suspicion and skepticism when we began removing doors, seats and assembling this weird-looking contraption. There was a lot of quizzical looks and indistinct mumbling in Arabic by the pilots and ground crews.

I had done a good bit of aerial filming before, but never as concentrated as this. I might suggest that anyone planning to spend ten to twelve hours a day in a helicopter for four days straight request a foot rest for the Mini-Mount. The lower legs and feet become a little leaden after a few hours. It tends to make you fall down a lot when you get back on the ground. Also, I learned by experience, tape the trouser legs or tuck them into boots or both. After the first day of trousers flapping in the breeze I neatly "shaved" the hair off my shins with the result feeling much like a mat burn.

We shot about 6,400 feet of aerial footage in four days with very good results, considering the conditions we were working under. Because of the vast number of locations and the time limitation to shoot each one, we were not able to plan our shots ahead of time. We'd fly to an area, circle around a few times while Mike and I planned what to shoot and how, then go in for a few takes of each location. We flew from sunup to sunset each day, landing only to reload film, eat, and/or refuel.

Secondly, we were unable to use trained camera pilots—which was a definite disadvantage. In addition, we were unable to use the same two pilots for the entire four days. Because of the physical strain of flying that length of time, their commander gave us a new pair of pilots each day. As a consequence, it would take about a half-day for the pilots to get into the feel of what we were doing and what we required of them. Then, the next day we'd start over again with new men. Definitely not the ideal way of doing aerials.

We found Jordan to be a spectacular country from both the air and the ground. People in the U.S. have no idea of what the country is like and, I must confess, neither had I before going there. What is most striking is the physical appearance of the country. Jordan is a land of contrasts. From lush, rolling green hills and valleys to desert. From crowded towns and villages to Bedouin encampments.

Another feature is Jordan's vast treasure of antiquities and history. So much of what we've read in history books literally oozes out of every rock, stone and grain of sand. The Romans, the Greeks, the Crusades, Lawrence of Arabia and the Biblical stories of the Old Testament are all an integral part of Jordan's history.

From the Roman ruins of Jerash to the silent grandeur of the Nabataean "Rose City" of Petra.

From the awesome beauty and majesty of Wadi Rum to the Crusader fortress in Kerak.

Mt. Nebo, overlooking the northern end of the Dead Sea and the fertile Jordan Valley, is, according to Biblical history, the point where Moses remained to die while the Children of Israel continued on into the Promised Land after forty years of wandering in the desert wilderness of Arabia.

A small Byzantine church (dating from about 800 A.D.) in the predominately Christian village of Madaba, contains a fabulous mosaic map of the Holy Land laid into its sanctuary floor.

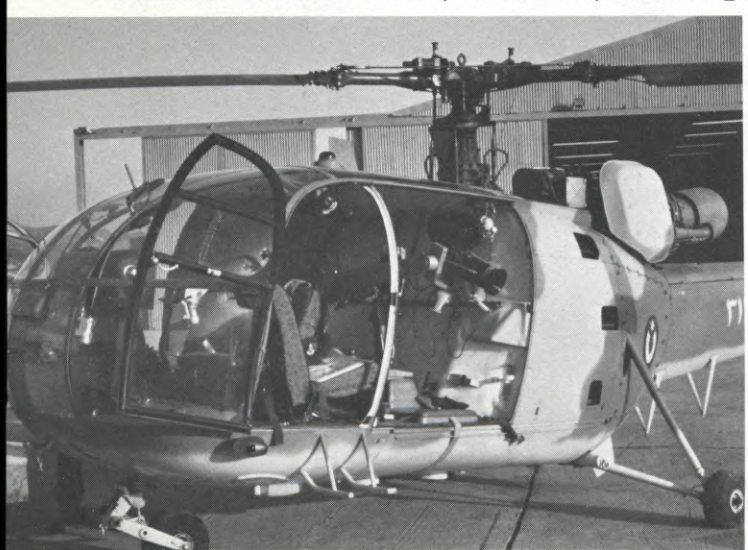
Near the desert oasis of Azraq to the north of Amman is a walled Roman fortress which was used by Lawrence to recuperate after his capture and torture by the Turks during the Arab/Turkish wars of the early 1900s.

And Amman, Jordan's capital, is the ancient Roman city of Philadelphia. Many ruins can be seen in and around the city today.

After the aerial work was completed, we began to concentrate on interiors involving, for the most part, Jordan's industry located in and around Amman. Having seen most of the spectacular Jordan landscape from the air, we had our misgivings about having to do interiors when so much was waiting for us on the outside. As it turned out, the interiors, in their own unique way, were just as interesting.

Jordan is what the world community would term "an emerging nation." With

(LEFT) A Royal Jordanian Air Force helicopter rigged with the Tyler Mini-Mount, one of two Alouette six-seaters provided by the government for aerial filming. Over a period of four days, 6,400 feet of 16mm film were exposed from the air with good results, the only disadvantage being the lack of trained camera pilots and the fact that a new pair of pilots had to be used—and trained—each day. (RIGHT) The author and the film's director, Mike Tomack, airborne high above the Jordan landscape.



limited natural resources, save for the tourist trade, Jordan does manage to have a small but vital industrial economy. And we covered most of it on film. One industrial complex, appropriately named "Hussein City", produces everything from paint and Lux soap to metal cans and ice cream bars. We also filmed at a cigarette factory, a thriving young industry in Jordan, with surprisingly modern and sophisticated machinery. What was ironic were the Arabic "No Smoking" signs posted throughout the factory. Other industries we covered included furniture manufacturing, architecture, construction, television, steel, cement, phosphate and potash mining and several textile plants.

With our limited supply of lights (eight Lowel Tota-Lights, plus a few 1Ks borrowed from the good people at Jordan television), we had to shoot fairly tight, although we did cover somewhat wider areas on occasion. We used EF on all interiors and post-flashed everything. For one segment in a large textile mill, we pushed one stop, after requesting a snip test, the reason being that this textile mill was producing military supplies: nice, dark, light-absorbing olive-drab blankets. Bare bulbs suspended over each loom (and there had to be fifty or more huge looms in this section of the factory) provided the only available lights, with minimal daylight fill coming from small windows high on one wall. I used the 5.9mm wide open from one corner of the room for an overall view. Then I went in close, pushed on a little cart past the rows of looms. It came out pretty well, although a little grainy in the shadow areas.

Unless the budget can afford to provide the location crew with its own power supply, it's advisable to check the power requirements of the countries you will be working in. Jordan, like most foreign countries, uses 220-volt power. We bought 240v quartz bulbs (Q800T3/4CL 240v) for our Tota-Lights in Los Angeles before leaving, which saved us conversion hassles when we got to Jordan. The slight disadvantage these 240v bulbs have is that they are 800 watts, as compared to the normal 1000-watt bulbs used for U.S. 110v power.

We also had to buy adapter plugs, because their plug and receptacle system is altogether different from ours. I've found that the plug and receptacle systems vary from country to country around the world. Again, checking on this before leaving can save valuable production time on location.

Charging batteries is another problem to sort out before leaving. We found that the Franzus Converter Model F-11 worked well for the 8v/16v Cine-60 battery belts. On an overnight charge, the converter unit got a little warm and hummed a bit, but we never had a battery fail at any time.

Bedouin children of Wadi Rum in southern Jordan. A nomadic people, their tents can be seen in the background. The crew found the country to be a "cameraman's paradise", since no matter where the camera was pointed something of extraordinary visual interest could be filmed.

One problem we did have was that of misjudging the amount of interiors we had to do. Once in the country, several more interior scenes were added to the script. Consequently, about two-thirds of the way through we ran out of EF and we obviously didn't have the lighting equipment needed to shoot ECO. Well, Jordan TV came to the rescue again with EF Mag Stripe which we put to good use.

After doing the interiors, we went back outside and began to travel by car and truck all over the country. Jordan is a relatively small country and can be driven from top to bottom in a day. Amman served as our base of operations, except for a side trip south for a few days to cover Aqaba, Wadi Rum and Petra. The roads, for the most part, are good and well maintained. However, we did get into some desert tracks that were pretty rough. The equipment was well packed in protective foam, but we still managed to shake a few screws and nuts loose.

I carried the NPR on my lap most of the time. We wanted to be ready to film anything interesting on a moment's notice while driving to and from locations. This type of activity can be wearing on equipment, and it was. Toward the end of the second week the constant-speed motor of my NPR gave out, due to constant jostling and dust. Fortunately, Jordan TV came through again. We had one of the station's cameramen with us as an observer and he mentioned that they had three new, never-before-used Beala crystal-sync motors sitting on their equipment shelves. It seems that when they purchased the motors from Europe, no one told them about adapting their power cords. As a consequence, all their footage was flashed, due to the bloop light staying on. So they shelved the motors. John found that their electronic supply had the necessary resistors needed to adapt the power cords and quickly soldered them in place. As our "reward" for doing this, we had the use of one of the motors for the rest of the time. John's motor gave out soon after mine, but he was luckily able to repair it himself. Fortunately for us, these were the only real equipment problems on the whole trip.

Other production problems, albeit minor, were another matter. One such problem was communication, or the lack of it. Most of the key people we worked with spoke English and for those that didn't, our observers from Jordan TV acted as interpreter. Even with this, there were many frustrating moments, especially for our production manager, Jim Greer. Although everyone we dealt with was extremely helpful and cooperative, there was a tendency at times to promise us the world and then not be able to de-

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(ABOVE) Setting up a shot in which the lens of the camera, as the "eyes" of the protagonist, looks at a lawyer through the grill of a prison visiting area. (BELOW) The lawyer, as he appears subjectively to the prisoner looking through the grill. Takes such as these, running six or seven seconds, formed the stream of memories from the refugee's past.

THE SUBJECTIVE CAMERA
Continued from Page 255

stopping, moving from door to door taking in a hand knocking, ringing a bell, remaining rock steady for a conversation, then moving fluidly on.

The script called for a chase sequence in which the refugee runs down the same stairs out the door and is pursued in a complicated game of hide-and-seek with the police. This chase experience demonstrated some basic verities of cinema. Taking advantage of the STEADICAM'S extraordinary mobility, the sequence was to move through narrow passages, up and down stairs, in and out of courtyards, and through the picturesque old town of Geneva. One part of the chase called for the STEADICAM to run a hundred yards down a cobblestone street, avoid capture from a side street by racing up a flight of sixty-five stairs, and darting into a darkened doorway. We did three takes, after which STEADICAM operator Jerry Dunkley looked like the heavy favorite in the Olympic marathon who has just finished fourth. When we saw the rushes, all this sweat and struggle came out as a smooth dreamlike ascension—a total bore, completely contrary to the effect we were looking for. This brought out a basic question of subjective camera. The grammar of cinema has established the subjective camera as the hand-held camera, that is the camera that is jerky and moves roughly. The STEADICAM, in subjective terms, is *physiologically* true; that is, our servo-motor mechanism stabilizes reality when we ourselves are in abrupt movement, yet stability is not always *psychologically* true, in that it dedramatizes the message on the screen. It is not simply that we as film-goers have been conditioned to associate hand-held movement with subjectivity, but that there is something intrinsically expressive and interesting in a jerky camera, in the same way certain brush strokes are more expressive.

(LEFT) Setting up to shoot the crucial courtroom sequence, which takes up almost half the running time of the film and is limited to one static view, with some characters 20 feet from the camera. Whereas 10mm lens had generally proved most effective for creating a feeling of subjectivity, in this particular sequence a change was made to a 25mm lens, but the set was rearranged to maintain the same perspective. (RIGHT) Preparing to shoot an exterior scene for the final sequence of the picture.

Another verity demonstrated in the chase sequence is that one subjective point of view does not make a chase. You need either fixed points of view where the runners pass in their turn, or at least the points of view of each party involved. If you're going to cut them off at the pass, you have to have your camera there first. Alas, our poor refugee could flount the rules of man, but not those of cinema and was, thus, very quickly apprehended.

Another very welcome bonus of the STEADICAM is the built-in possibility of separate video monitoring and recording. Not only is this a boon for the director to see what has been shot, but since the camera operator does not have the same control that he does with ground glass, mike booms and another anomalies can be immediately checked.

The mixing of black and white and colour allowed for striking graphic effects through superimpositions and dissolves, the mixing of "memory" and "reality". Using negative was helpful, as running the overlapped work prints on the editing table gave a clear idea of what it would look like in the final print. A tough assignment for the lab was getting the hard black I wanted on colour stock, rather than going to a sepia. The result was good, though for festival copies we spliced in the longest black and white section on black and white and used mag stripe for the sound.

The sound recording during shooting was straightforward; subjectivity required a single point of view or point of listening. The rethinking had to be done with the refugee's voice, in order to give it an interiorized quality different from the voices of the other characters "out there". Also his effects, such as steps and breathing, had to have a different quality. With some experimentation, we achieved a voice quality that was both full and intimate, that corresponded to a subjective voice without being like the voice of the Almighty or the whispery voice cinematographers associate with unspoken thoughts in a character's mind.

(ABOVE) A memory sequence of dancing preserved the effect of subjectivity, but it proved to be no ball for cameraman Lesniewicz, who took a nasty fall while whirling around tied to his "partner". Memory sequences were shot in color, present reality in black-and-white. (BELOW) The refugee's hands are precisely positioned in front of the 5.9mm lens, as he covers his eyes to protect himself from the blows of his torturers.

The decision to shoot subjectively was made partly (for political reasons) to avoid showing the refugee protagonist's face. It is shown only for an instant, when the torturer thrusts his beaten and bloodied face before a mirror, which he smashes with his hand (LEFT), only to confront his shattered and fragmented image in the shards of broken mirror on the floor (RIGHT). The trick in this case was to avoid picking up the image of the camera and operator in the mirror, as well.

A rehearsal of Steadicam movement for the scene in which the refugee is captured. Based on the experience of shooting "I AM A REFUGEE", the author maintains that "the Steadicam opened up whole new possibilities for subjectivity and proved itself a superb instrument for tracking, especially over difficult terrain."

(LEFT) Lighting five floors of an apartment building for a complex movement shot proved a challenge to Director of Photography Jack Hazan, especially since it was necessary to keep lights and cables out of the range of the highly mobile Steadicam. (RIGHT) The Steadicam, operated by Jerry Dunkley, demonstrates its ability to squeeze smoothly through narrow spaces.

One advantage of never seeing the principal character was that there was no sync problem and we could even change dialogue up to the last moment. We found that the subjective voice coupled with the image was superpowerful and even a normal voice risked melodrama. The actor had to play it on the flat side to come out right. The character of the voice was crucial for the drama of the film, as it was the spectator's one link with the character, and it had to be one that assured credibility and encouraged empathy.

The film was shot half in French and half in English, so in order to have our two complete language versions, we had to dub half in each language (sub-titles are hardly subjective). For the English version, including dialogue tracks, we had up to thirteen tracks for the mix. The section of walking up the stairs, for example, had the refugee's voice, footsteps, clothing rubbing against the wall, heartbeats, breathing, assorted coughs, distant music from a party, and other effects such as knocking and doorbells. Respecting subjectivity we stuck to natural sounds, though in the memory sequences we had electronic music composed which added an important dimension and reinforced the drama of the images.

The making of "I AM A REFUGEE" was fascinating in that changing the rules of the game with subjectivity forced us to relook at many basic assumptions of cinema and find novel solutions. The STEADICAM opened up whole new possibilities for subjectivity and proved itself a superb instrument for tracking, especially over difficult terrain. It has some limits, which no doubt have been worked out, such as a limited range of tilt, notably down, and it's not designed to put the operator in a congenial mood if you're standing around wondering whether to do another take! For a relatively low-budget 16mm film, it makes possible a new freedom and pays for itself many times over in terms of what you can get up on the screen.

The film has been well received, and my major anxiety—that subjectivity just wouldn't work—proved needless. No one has been disturbed by it, and audiences enter easily into this particular vision and do, in fact, "identify" with the refugee and his plight. I do think the 35-minute length of "I AM A REFUGEE" is about the limit that the convention can be satisfactorily sustained; feature length risks claustrophobia. For that we'll have to wait for giant 3-D holograms when direct audience participation through the subjective camera could really come into its own. ■

INDUSTRY ACTIVITIES

HEADQUARTERS ANNOUNCED BY PMPEA

Increased membership and general activities has proven a need for establishing central headquarters for the Professional Motion Picture Equipment Association. The office, under the direction of the governing Board of Trustees, will coordinate all functions for this national organization.

Chuck Sorensen of Brenner Cine Sound serving as Chairman of the Board recommended the need for the centralization of general Association operations at the annual 1977 meetings. This office will maintain complete records of all proceedings, membership listings, and generally coordinate internal services to its membership, as well as to those offered to the filmmaking industry.

The 55 members consisting of manufacturers, distributors, and dealers of professional motion picture equipment yearly elect two members to its rotating Board of Trustees. Volker Bahnemann, Arriflex Company of America, and Ed Maguire, Calvin Cinequip, Inc., begin their three-year tenure by joining the standing board members: Anton Wilson, Anton/Bauer, Inc., Paul Meistrich, The Camera Mart, Inc., Chuck Sorensen, Brenner Cine Sound, and Art Kramer, Lowel-Light Manufacturing, Inc.

Officiating for 1978 are: President Chad O'Connor, O'Conner Engineering Laboratories, Inc.; Vice-President Cindi Becker, The Camera Mart, Inc.; Secretary/Treasurer Lee Duncan, Victor Duncan, Inc.

The Professional Motion Picture Equipment Association may be contacted through the national office: PMPEA, University Tower, Suite 809, 6440 N. Central Expressway, Dallas, Texas 75206, (214) 369-1165.

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ENTRY FORMS AND RULES FOR FIFTH ANNUAL STUDENT FILM AWARDS DISTRIBUTED BY ACADEMY OF MOTION PICTURE ARTS AND SCIENCES

Entry forms and comprehensive rules for the Fifth Annual Student Film Awards competition have been distributed nationally by the Academy of Motion Picture Arts and Sciences and the Academy Foundation.

The program, co-sponsored by the American Telephone and Telegraph Co., encourages excellence in student filmmaking at colleges and universities across the country.

The national Student Film Awards ceremony, scheduled for May 21, 1978 at the Academy's Samuel Goldwyn Theater in Beverly Hills, Calif., will honor films in four categories: animated, documentary, dramatic and experimental. Winning student filmmakers in each category will receive cash awards of $1,000 and will be flown to Los Angeles for the awards ceremony. In addition, up to two merit awards of $500 may be awarded in each category, as well as an honorary award of $750 given at the Academy's discretion.

To be eligible for the competition, a film must have been completed after April 1, 1977 in a student-teacher relationship within the curriculum of an accredited institution of higher learning. Deadline for entries is April 1, 1978 (except in Maine, Rhode Island, Vermont, Massachusetts, Connecticut and New Hampshire, where the entry deadline is March 10).

Nine regional committees composed of faculty, local film professionals, journalists and critics will review entries in preliminary judging. Films will be judged on originality, entertainment, the resourcefulness of the filmmaker, and production quality, without regard to cost of production or subject matter. Films of any length in 16mm, 35,, or 70mm may be submitted. (8mm films may be considered in the regional competition, but must be converted to a larger format in order to be eligible for the finals).

Regional juries will not consider films submitted by schools outside their regions and will have sole responsibility for determining final selections to be submitted for national competition. Regional winning films will be screened for judging by the Academy's membership of leading film professionals.

Entry forms, rules and a list of regional coordinators may be obtained by writing the Academy of Motion Picture Arts and Sciences, 8949 Wilshire Blvd., Beverly Hills, Calif. 90211. (213) 278-8990.

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PMPEA PLANS 1978 SEMINAR

The Annual Professional Motion Picture Equipment Symposium has proved to be one of the most successful yearly industry events. Cindi Becker, newly elected Vice-President of the Association announces that preliminary plans are well under way for the October 1978 Seminar to be held in New York.

This event is scheduled once again during the week of the '78 SMPTE Fall Conference and will be organized by an appointed committee of PMPEA members. Anton Wilson, of Anton/Bauer, Inc., will serve as chairman with Art Kramer, of Lowel-Light Manufacturing, Inc., Mike Sheppard, of Belden Communications, Inc., and Jeff Wohl, of The Camera Mart, Inc., offering supporting assistance. Leading artists from the film community will be sought to discuss the practical aspect of filmmaking and to moderate open discussions. Cameras, lighting, and support equipment will be provided for demonstrations from the PMPEA member companies.

The 1977 Program presented such notables as Haskell Wexler, ASC, Jim Webb, and Garrett Brown. These seminars have drawn attendance of 300 to 500 persons. Since seating accommodations will be limited and expectations for attendance are high, special PMPEA Seminar tickets will be available in advance. The Association, a non-profit organization, sets only a minimal charge for attendance, which meets only expenses incurred. The PMPEA National Office will distribute up-to-date program information prior to formal announcements in the Spring and Summer months. Should you wish to receive information relative to this Seminar, you are invited to send your inquiry to: PMPEA, University Tower, Suite 809, 6440 N. Central Expressway, Dallas, TX 75206.

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"SYBIL" WINS VIRGIN FESTE GOLD

The 10th Annual Virgin Islands Film Festival of the Americas closed on a highly successful note with the Lorimar production of "SYBIL" taking the Gold Venus Award for best of the festival. "Sybil" stars Joanne Woodward and Sally Fields, who both won gold medals for Best Supporting and Best Actress. The film also won Best Director (Daniel Petrie) and Best Musical Score (Leonard Rosenman). Composer Rosenman was on hand with a capacity crowd of 800-plus to accept the award.

The Silver Venus for Best Feature went to "A Hero Ain't Nothin' But A

Continued on Page 319

(LEFT) Two Bedouin members of the camel-mounted Jordanian Desert Police take a break in Wadi Rum. (RIGHT) A young Bedouin looks down upon the Desert Police fortress in Wadi Rum. During the Arab/Turkish wars of the early 1900s, this was used as a staging area by T.E. Lawrence before leading the Arab armies against the Turks in Aqaba, about 45 miles away. The authentic site was used as a location in the filming of David Lean's "LAWRENCE OF ARABIA".

(LEFT) The author, cameraman Dave McMillan, filming the sunrise from atop Jebel (meaning "mountain" or "hill") Rum in Wadi Rum, an area reminiscent of Monument Valley. (RIGHT) Cameraman John Monsour greeting the Royal Jordanian Air Force helicopter, after having spent the night atop Jebel Rum with the author. They were especially happy to see the aircraft, since they had discovered that there was no other practical way to get down from the high plateau.

A few of the many fascinating faces of Jordan: (LEFT) The proud countenance of a Bedouin elder tribesman in the Wadi Rum area of southern Jordan. (CENTER) A colorful merchant selling clothes in Amman's "Souk". (RIGHT) Another face full of character. Between Jordan's spectacular scenery and its photogenic people, it is easy to see why the author considers the country to be a "cameraman's paradise".

liver. There were times when we'd show up at a location to find that there had been no advance notice, or nothing to shoot, or both.

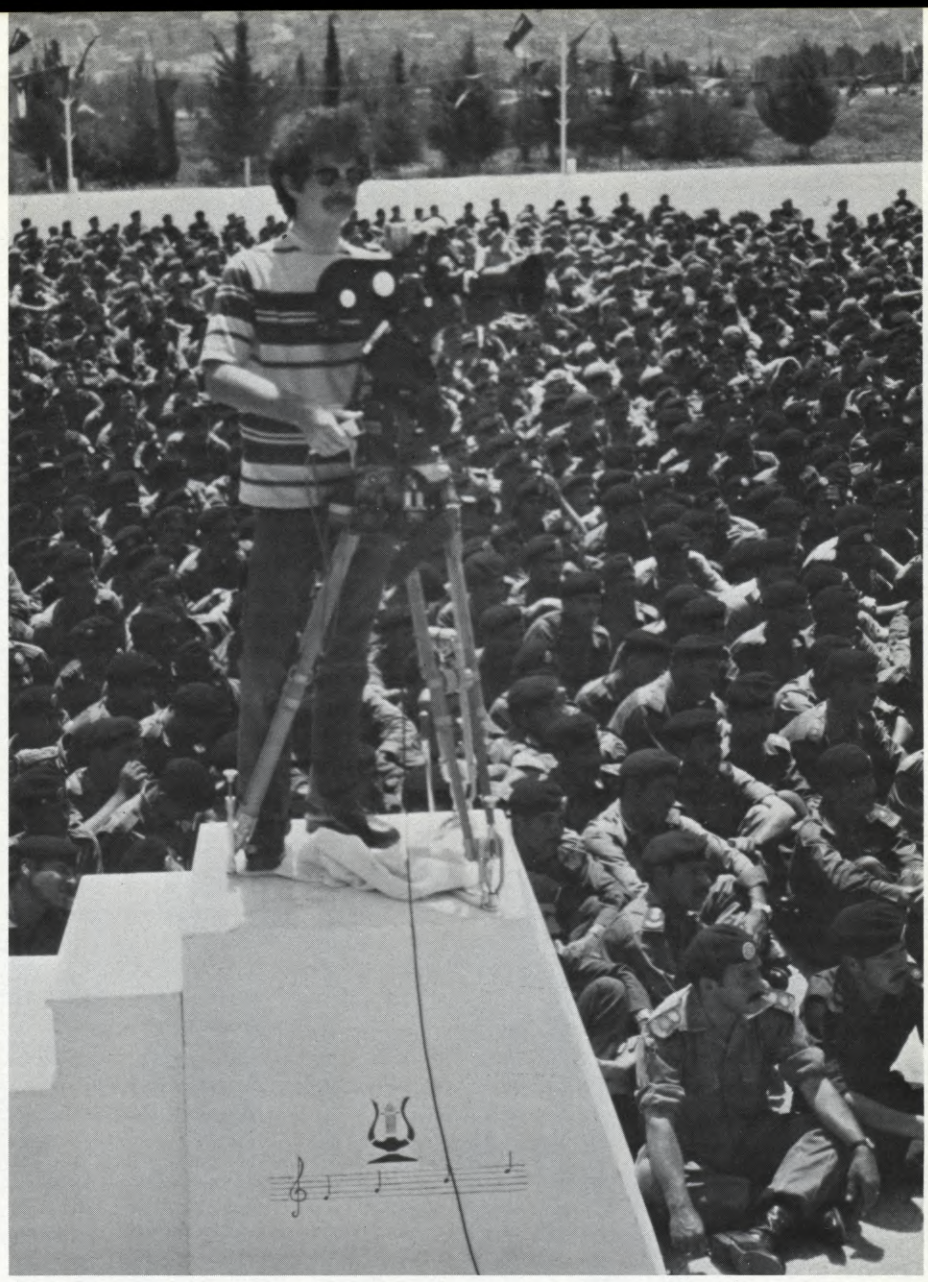
One such occasion was when we went to film the central produce market in Amman. The market was crammed with trucks and carts full of produce and people of all ages. Our intention was to wander amongst the people to capture the activity and flavor of the marketplace. So, John, with the Nagra slung over one shoulder and a shotgun mike in hand, and I, with hand-held NPR, waded into the crowd.

Well, Candid Camera we weren't. As soon as the camera was spotted, bedlam reigned. Before the police stopped us, we almost caused a riot. Everyone wanted to get into the picture and it got a little rough when a few enthusiastic people started to upstage other equally enthusiastic people. As a result, the police ushered us out of the area and wouldn't let us back in. The problem was that a day or so before, Jim, accompanied by a couple of people from the Ministry of Tourism, approached a man who claimed to be the manager of the marketplace and who, as it turned out, was not. So, when we argued with the police that we had official permission from the "manager", they didn't know what or who the heck we were talking about. A few days later Jim was able to contact the proper authorities and we came back to film what turned out to be an exciting and colorful sequence.

The above was typical of several similar situations during our stay in Jordan. What is most difficult for people outside the U.S. to understand is the American method of working. We are always in a hurry and it is difficult for outsiders to understand why we aren't more willing to "put off 'til tomorrow. . . ." This is particularly frustrating when you are trying to keep a shooting schedule. The problem is one of being firm with one's requests, while at the same time being diplomatic. Sometimes it's enough to try the patience of a Henry Kissinger.

Weather never posed a serious problem for us. The Spring days of April seem to be a good time to film in Jordan. We had a few bad days, but always managed to find an interior to film when that happened. The climate was very moderate, even in the desert. In fact, there were a few days that were downright cold. The summer can be quite hot, but the rest of the year is much like Southern California.

We covered a lot of territory during our four weeks in Jordan. And we found the country to be a cameraman's paradise.



The author, precariously positioned atop a band director's podium, films Jordan's King Hussein at an Army base near Amman. The crush of the crowd almost toppled him, the camera and the podium in the frenzied rush of 3,000 soldiers attempting to merely touch the king following his speech.

There are three areas that are especially so. You can almost close your eyes and point the camera anywhere to come up with a fantastic shot.

One such place is known as Wadi (meaning "valley" in Arabic) Rum and the Valley of the Moons. This area in southern Jordan is very reminiscent of our own Monument Valley in Utah, but far more spectacular. Monumental outcroppings of rock formations tower over the desert landscape. Portions of this large area were used as backgrounds for the David Lean production of "LAWRENCE OF ARABIA". The colors change throughout the day, with the sunrise and sunset being the most spectacular.

When we were doing aerials in this area earlier, John and I persuaded the pilots to drop us atop Jebel (meaning "mountain" or "hill") Rum overnight so that we could film the sunrise and sunset against this breathtaking scenery. They thought we were a little crazy, but after a full day of aerials in Aqaba and Rum, and after stocking the helicopter with blankets and food, we were dropped atop Jebel Rum in late afternoon. As we watched the helicopter shrink to a speck in the distance and finally disappear, we realized there was no way off this mountain if, for some reason (like another war), they didn't return in the morning. Even with climbing gear, Jebel Rum would have presented a formidable challenge to even the most experienced climber. One can hike and climb up, down and over the uneven tops of the jebels, but eventually you come to a sheer drop that plummets you 2,000 feet or more to the desert floor below.

Rather than dwelling on depressing speculations, we busied ourselves shooting the sunset, which was spec-

(ABOVE) The Street of Columns in the ancient Roman city of Jerash. (BELOW) The "Urn Tomb", one of several temples carved into Petra's sandstone cliffs. A Greek inscription chiseled on one of the walls indicates that this structure was used as a Christian church in A.D. 447.

tacular, then scouted a camera position for the sunrise, gathered fire wood and settled in for the night.

In the morning we filmed the sunrise, utilizing both the 200mm Nikkor and the 500mm Nikkor mirror-reflex lenses. These two lenses, using the Nikon-to-C-mount adapter on the Eclair and a special lens brace made for me by the late Herman Galli, were beautiful to use. Extremely bright and sharp.

There is a problem, however, when using the 500mm reflex-mirror lens with a motion picture camera. Being primarily a 35mm still camera lens, the exposure is normally regulated by shutter speed. Therefore, unless the exposure is f/5 when using the lens with the NPR, you have a bit of a problem. This necessitates adjusting the angle of the camera's shutter and the ASA according to the light levels you happen to be working with. Normally, when the shutter angle is varied, strobing occurs during tilting or panning. But on the occasions that I've used this lens, strobing has never occurred. I've never gotten anything but excellent results with the lens.

Once the sun was up and beyond the point recognized as a sunrise, we packed up our equipment and eagerly awaited the helicopter. Shortly thereafter, we were picked up and whisked away for another day of high-flying adventure in the skies over Jordan.

A couple of weeks later we returned to Wadi Rum by car and concentrated our filming around a small fortress used by the Desert Police. Because of several natural springs bubbling from the base of nearby Jebel Rum, a small but continually changing community of nomadic Bedouin surround the fortress with their tents, families and livestock. They are a proud and dramatic people and a pleasure to work with on a personal level, as well as from a filmic standpoint. We couldn't pass up the opportunity of filming them. But first we had to observe a particular social protocol which we had come to expect since arriving in Jordan. No matter if we were in a government building in Amman or a Bedouin tent in Wadi Rum, the Arab coffee and tea ceremony never varied. We drank so many liquids during our stay that we could have survived in the desert longer than any camel. Or, at the very least, been major contributers to a desert irrigation project.

Since this social event is such an integral part of Arab custom, we decided to film it staging a "visit" to the Bedouin camp by two Desert Policemen who came riding in on camels. Since the major action took place inside a long tent (one side was open to the outside) and the nearest electrical source was about forty-five miles away, we shot everything wide open or close to it, trying to keep from seeing as little exterior as possible in the shots. The light sand outside provided nice bounce-fill on the individuals inside. The Bedouin were extraordinarily cooperative and thoroughly enjoyed themselves. The results on film were excellent in spite of the handicap of hand-holding the NPR with one hand and sipping tea with the other. By the time we left, we were like long-lost brothers. It was unfortunate, however, that we couldn't film the women or girls. Because of strict Moslem law and custom, we were unable to capture this aspect of Bedouin life on film.

The second area of this cameraman's paradise is the ancient Nabetaean "Rose-Red City" of Petra, dating back to between the 2nd and 1st centuries B.C. This is an area to which pictures and verbal descriptions cannot do justice. Petra has to be seen "in person".

A natural 100-to-300-foot-deep, narrow rift cuts through solid rock for a half-mile, making the only natural entrance into the city. At the end of this rift or "siq" is the Treasury building, probably the most spectacular and best

preserved site in Petra. The city's focal point of interest, the Treasury is carved entirely in relief from a sandstone cliff, its size dwarfing any human standing beside it.

From this point the "siq" widens and eventually ushers the visitor onto a wide plateau surrounded by high cliffs. Into these cliffs are carved numerous buildings, temples and dwellings. On the plateau itself are remnants of Roman occupation, the Romans having conquered the city during the 1st Century A.D. Unfortunately, earthquakes and other natural occurrences have all but destroyed any evidence of Roman habitation.

The third feast for the camera lens is Jerash, a city built during the Roman occupation of the 1st and 2nd centuries A.D. Only recently uncovered and partially reconstructed after having been buried for almost 18 centuries, Jerash is a spectacular example of Roman art and architecture.

We did a lot of filming in these areas, trying to pick angles that would best convey the beauty and splendor. Unfortunately, 16mm is just too small a format to adequately do it justice. 70mm comes the closest, but these areas really have to be seen in person.

The high point of the trip, an occasion we'd planned on but were never quite sure if we'd get the chance, was filming His Majesty, King Hussein. As it turned out, we filmed him on two separate occasions, once being at the royal palace in Amman. He only had time to do a short interview with us, so we quickly set up in a small room in the palace that happened to have two very large windows on two walls. Utilizing some Tough Blue we brought along for the Tota-Lights, we were able to pretty well balance the light with the exterior, with only slight overexposure. Fortunately, it was late afternoon on an overcast day. Bright sun would have been a problem.

The second occasion was when he addressed about 3,000 Jordanian soldiers in Amman. Besides the obvious treat of filming the King, it was interesting watching the interplay between him and this very large gathering of soldiers.

During his address to the troops, he was constantly interrupted by one or more men who would stand up, shout a testimonial to him or lead the others in a cheer. One man stood up, interrupting the King, to read a ten-minute poem he'd written. When this happened, the King would stop speaking and politely listen to the man or men. When they had finished, he would resume speaking. At the conclusion of the address, he was literally mobbed by the troops. Such a scene is a bit unnerving, especially when you are precariously positioned atop a band director's podium as I was. The crush of the crowd almost toppled me, the camera and the podium in the frenzied rush of soldiers attempting to merely touch the King.

In conclusion, here are a couple of general items that might make your overseas locations less complicated:

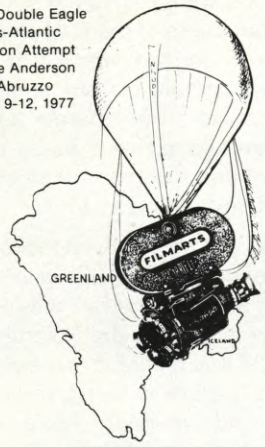
Registering equipment (primarily equipment bearing serial numbers) with U.S. Customs is essential before leaving the country. This is a simple matter of listing equipment and serial numbers on forms obtained from the nearest U.S. Customs office. The inspecting officer must personally inspect and match the equipment and numbers to those that you have listed, so it is a good idea not to leave this until the last minute. Oftentimes, the Customs officials will tell you to do it at the airport prior to boarding your flights, not realizing the amount of equipment involved. If equipment is not registered, you stand the chance of paying duty on it when returning to the U.S., even though you've bought and paid for it there. It can be a real hassle and you stand the chance of it being held by Customs until proof of when and where it was purchased can be supplied.

Another aid is a custom's broker, if the project's budget will allow the extra expense. It'll save you a lot of time and headache in the long run and is well worth the extra money. After numbering each case, we merely supplied the custom's broker with a list of the equipment by case number and the custom's registration forms and that was it. The broker got the equipment on our same flight (freight can go on a separate and later flight if not booked well ahead of your departure) and took care of all customs problems here and abroad.

And last, but not least, an inexpensive but tremendously effective public relations tool: an inexpensive Polaroid camera. While in Jordan, the Polaroid camera brought true meaning to the old proverb: "One picture is worth a thousand words". And we might have added: ". . . . or a thousand dollars". People fell over backwards to help us for just one little Polaroid print. We couldn't have offered them anything that would have meant more.

A full year has now passed since our trip. The films are completed. Viewing them has revived a flood of memories. One does not leave Jordan without taking with him a myriad of images etched indelibly in the mind. Jordan is a country you visit expecting little, and leave with the senses staggered beyond belief. Only then do you realize that this tiny kingdom of the Hashimites is the hub around which all the great civilizations of the world have revolved. Jordan is a land where nature and history have left their marks of greatness and splendor. Majestic, silent and forever haunting. ■

The "entourage" involved in the filming. (Standing, left to right:) Kamal Ahmad, Ministry of Tourism; Adnan Awamleh, Director of Jordan Television; Jim Greer, Production Manager, UCIF; Mike Tomack, Director, UCIF; Daoud Kamal, Driver; John Monsour, Cameraman, UCIF; Zeid Fariz, Director, Jordan Television; Dave McMillan, Cameraman, UCIF. (Seated, left to right:) Mohammad, Driver; Radwan, Driver; Hmoud Abu Rumman, Grip; Omar Abderrahim, Cameraman, Jordan Television.



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ADVENTURE SOUND RECORDING
Continued from Page 263

would not be lost and it allowed me to concentrate on recording rather than worry about the safety of the gear.

Wind noise was the biggest problem, followed by lack of range on the radio mics. Whilst it is jolly nice having these small unobtrusive mics, the lack of an effective windshield rules out their use in many situations. This is a problem area that all the manufacturers of these small condenser mics should look into.

From the experience of an Everest expedition in 1971, I determined that the equipment I would take on the 1975 British Everest expedition should be the lightest, most reliable and most compact set of equipment it was possible to obtain. The obvious choice of recorder was the Nagra SN. But how to get round the problems of the auto record, lack of monitoring at a reasonable level and the restriction of microphone type?

I had tried the SMR made by Kudelski for the SN on some films about pot holes but found it too restricting. I took the problem to Walt Denning who leads the maintenance team in the Film Department at Ealing and asked if he could make up some mixers with two inputs to take any kind of microphone and power it if necessary, proper monitoring facilities and a remote start/stop for the Nagra SN. I gave Walt only three months notice of my requirements, but he and his team produced two mixers that more or less fitted the bill. There were little luxuries I hadn't expected, such as a proper PPM, tone source generator, a record indicator and a variable-level monitoring system. The controls were so designed that they could be operated wearing thick mittens. It was only the experience of using it that made me realise that small improvements could be made.

It was most convenient to have the mixer belt mounted round the waist with the SN in a pocket. I used double-play tape running at 3¾ IPS which lasted 54 minutes. There were no problems with this tape and, in spite of its thinness, I experienced no print-through.

I took four SN's because I knew that as the climb progressed they would be dispersed amongst the different camps and I could only be in one place at a time. One of the SN's was the slow speed version running at 15/16 IPS. The idea behind this was that a climber leaving Camp 6 on a summit bid could switch it on some distance from the summit and we would have a continuous recording of nearly four hours. It was the standard SNS with the Nagrastatic mic feeding straight in. All the climber had to do was switch on. I

must admit the attractions of this, sitting in a warm office discussing the merits of this system, made me overlook the problem of getting some one to use it. The attraction of sync sound from the summit of Everest is very heady stuff. It is virtually impossible to extract a ten-Hertz pulse at this low speed and no climber wants to carry unnecessary weight on a summit bid. I eventually persuaded Peter Boardman to take it with him as he was in the same summit party as Mick Burke.

Mick was using a Bell and Howell Autoload converted to crystal sync by using the motor from an ACL. As you all know, Peter Boardman reached the summit before Mick and Mick tragically lost his life. Peter recorded about half an hour of his thoughts and feelings whilst on the summit and, although the lack of an efficient windshield spoiled some of it, most is perfectly intelligible.

The practical realities of trying to film a summit bid on a mountain like Everest are that no one is going to wait for shots to be set up and no one is going to carry anything that adds to the weight of the survival gear they are taking. As Dougal Haston put it: "I can't use a Nagra if I get into a desperate situation."

Peter took the SN because he knew the route had been made and his attempt would be easier than the first pair. None of the SN's gave trouble, apart from a record amplifier giving up in Kathmandu before we left. When cold, they took a couple of seconds to run up to speed, but this was more likely to be a battery problem. I have found from experience that the Sennheiser 415 and the Audio Engineering radio mics are the most reliable and convenient microphones to use in hard situations. Their ability to withstand rough treatment is quite remarkable. It was not as cold this time as in 1971 with temperatures at night of around −20°C and +50°C during the day. Problems with oxygen supply valves stopped me going beyond 24,000 feet.

Working at altitude is very difficult because of the thin air and you have to think very carefully before doing anything. Lethargy is difficult to ward off and it is only too easy to put off till tomorrow what you should do today. You tend to think more slowly and move more slowly because, even when carrying nothing, it is hard work.

Moving from one camp to another we would leave camp at around four in the morning when it was still dark and quite cold. As daylight came, Mick and I would start filming, the temperature still subzero. As the sun rose, so did the temperature and we would start to discard the cold weather clothing and pack it into our rucksacks. My sack, when loaded for moving between camps, with the SN

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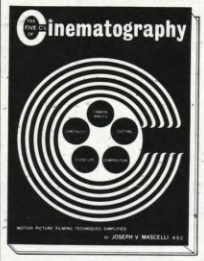

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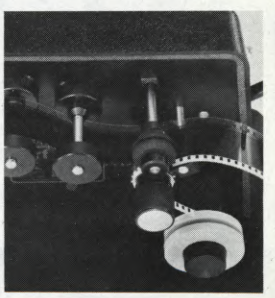

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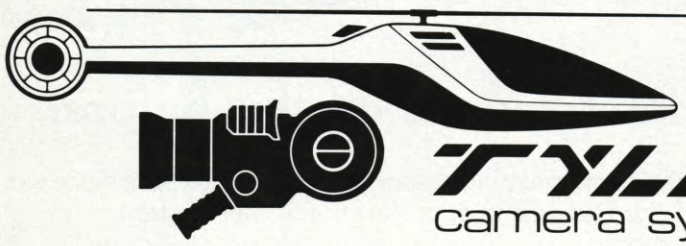

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channel weighed 35 pounds, which at sea level would be no problem, but above 20,000 feet it is hard work. To have carried a Nagra 4.2 or an IS would have meant throwing out protective clothing with possibly disastrous results. I did take these machines with me in case the SN system proved unsatisfactory, but I only used them for the subsidiary stories.

The IS was easy to use, but offered no advantages over the SN and mixer and its size and weight were a positive disadvantage. The 4.2 proved again its thorough reliability and the facility of three microphone inputs was useful in base camp. All praise must go to the SN and mixer, and although the mixer needs further development, the concept is excellent and I was able to record sound in locations that I could not have reached using conventional machines.

Reliability and robustness of men and machines when being stretched to their limits is vital to the success of an adventure film. At low temperatures it is likely to be the machine that fails. At altitude it will probably be the man. Put the two together and you realise the almost impossible task of bringing back a high quality film from a mountain like Everest. When you manage to get a recording from the summit the satisfaction is immense. ■

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L-O-N-G CRAWL TITLE
Continued from Page 271

best for pulling the cardboard mount, as thicker string would overlap on the winding shaft and cause the crawl effect to "chatter".

If I require only a limited number of crawl titles for a few prints, I prefer to use single-perf Plus-X Reversal stock, 7276, and actually film the number of titles required. These are then spliced onto the release prints.

For a larger quantity of titles, it is necessary to go another generation. For obtaining greatest clarity and definition, I used High Contrast Positive film 7362 in the camera. This is exceedingly fine-grained, but limits exposure latitude to a relatively slow ASA 8 or thereabouts, depending on the lab processing. A preproduction film test is recommended, with you and the lab keeping notes.

In this instance, the release prints to which the crawl title was to be added were "B"-wind, made from an internegative. Obviously, generations that the crawl title had to go through would yield less definition to the very small lettering. Consequently, I mounted the Kodalith negatives upside-down with the copy inverted. Therefore, when the motion picture negative which I shot was printed, the crawl title would read correctly as a "B"-wind print.

The lab printed upon single-perf release stock 7302, exposing fully the track edge to achieve black sound-track area.

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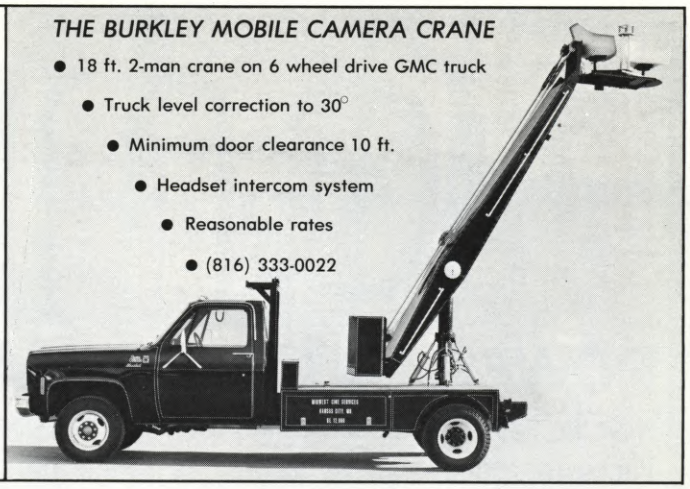

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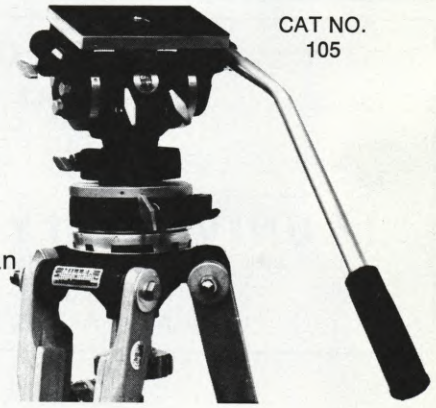

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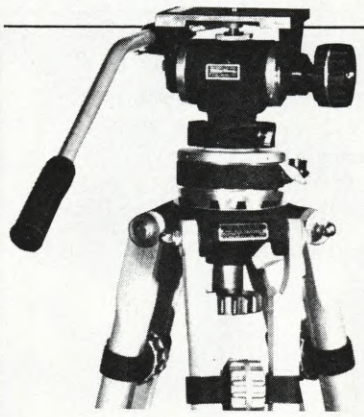

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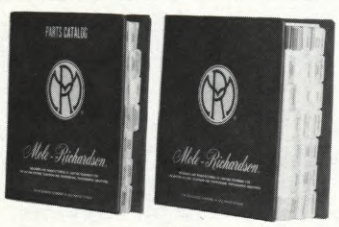

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RALPH WOOLSEY SEMINAR
Continued from Page 279

many have changed. Eastman is constantly working on the stability of those dyes, but we must remember that theatrical prints are not designed for longevity.

QUESTION: One more thing on 5247. Shooting RGB's film I've had a problem with shooting somebody with a green shirt. It comes back blue or blue-grey. What's the problem with that? Does it have to do with exposure or what?

WOOLSEY: It's important to process the negative soon after exposure to prevent latent-image growth and color-shifting. I have had RGB reprint on occasion, because they were obviously off. Once I had three prints of a roll made on different days and got three different results. They will do work over if it's a legitimate complaint. I do like 47, and started using it in my still camera right away, because of the fine grain properties. You can make fantastic blowups from it. But I have used it for pictures, and in commercials from the beginning. It's crisp and has brilliant colors. When we did the picture, "MOTHER, JUGS AND SPEED", I picked 5247, even though there was a lot of objection to it. Many cinematographers at that time didn't want to use it because they said the colors were too bright, the contrast too high and all this. And there were a lot of valid objections. But we had a lot of night work, in what I like to call "available darkness". I found out that all the black-box systems the labs were using for 5247 were really a system of latensification. One of them called it "Tech 400"; another called it "AL400" and another one called it something else. MGM wouldn't even give it a name. It consisted of the old method of latensifying a picture. After photography, the negative is exposed to a very weak light for a long period of time. This builds up exposure in the threshold region of the negative and doesn't produce any fog level—it stops just short of that. Some of these exposures took up to eight minutes, which meant that the film had to very slowly run through in the secret room. That's very weak light. Then to counteract the shift which sometimes occurred to the green side, they made it a warm light. These lab guys know all about this film. They all get together and the techniques are similar. We actually shot that 5247 on the streets at night with an exposure index of 500, and got lots of fully-exposed film without the kind of grain we used to get with 5254. In the

anamorphic process the fine grain was important, because we had a lot of shots with detail off in the distance and action in the foreground. It constantly amazed us, when we looked at some of this film, how much sharper things were off in the distance. The director, Peter Yates, said, "That film is so good, we better have those people do their background action a little more carefully; we see everything they do." By now, we've had the most recent improvement in 5247 starting with the 600 emulsion. It doesn't latensify like the other film did, but you can force it a couple of stops with very little color shift and with very little increase in grain. It's just marvelous. In fact, it's so easy to shoot a color picture now, as far as the sensitivity of the material goes, that sometimes we think anybody can go out and do it. It certainly does make it easier, but at the same time it opens up opportunities; you can do a lot more with it. As to your slide color-shift, it's more likely the print than the negative, because the processing has been fairly well standardized. If I get a little sloppy with my still camera on exposing 5247, I can order extra sets of slides done on different printer lights and in this way get a range of densities to pick from. It's a bad habit you learn from shooting negative. When you shoot reversal, you do get much more careful about your exposures.

JAMES POWERS: Thank you very much, Ralph. ■

(POST SCRIPT: Since the November 1976 date of this Seminar, the wide acceptance of 5247 EK Color Negative, as now modified, has led to outstanding results on the screen as cinematographers were challenged by its possibilities. I've seen lab test results which now hold the promise of greatly enhanced 5247 film speeds up to eight times normal, while maintaining astonishing image quality. As this processing becomes available, the implications for use of slower lenses, filters, overcranking, etc., while exposing for or balancing to low and ambient lighting, are exciting, as are possibilities for opticals of quality from "pushed" negatives.

In using HMI lighting, I've found several answers to problems mentioned at the Seminar. Excellent daylight-quality illumination with great electrical efficiency, coolness and compactness has far more than offset disadvantages, which now seem slight. Ease of color-balancing to exterior, interior or fluorescent lighting of several types, and the ability in most cases to power smaller HMI units "off the wall" (with due regard for frequency parameters) are additional plus values. These lamps are valuable adjuncts to the carbon arc (which to me is still the King of Lights) or as replacements for such widely used luminaires as the so-called mini- and maxi-brutes—certainly when true daylight is the desired starting-point and far less energy is needed to get there.

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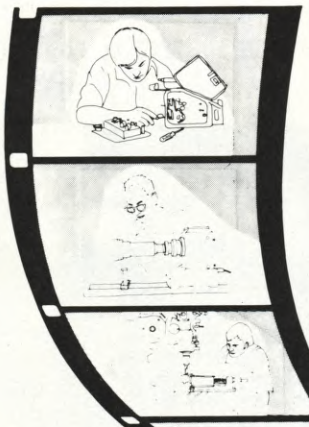

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FILMING A LIVE SYMPHONY ORCHESTRA CONCERT

Continued from Page 265

When I switched the light on, five cameras started more or less in unison, each with the conductor somewhere in their shot. It was then a simple matter to find the low point of the down beat to sync all five rolls of film.

A good friend very kindly let me use his three-screen KEM table for editing. The choices involved in cutting five cameras to the rhythms of *Rhapsody in Blue* were mind-boggling, and it was essential to be able to see at least three of the options at once. It was the frame-by-frame precision of film editing that allowed me to make exactly the right cut at precisely the right instant.

Because the piano is like a giant clapstick with eighty-eight little clappers, being out of sync by even one frame was quite noticeable. I had all five workprint rolls and the mag track edge numbered to facilitate cutting 100% in sync.

The finished film is 28 minutes long and incorporates interview footage of Pat, his parents, and his associates, as well as other musical sections of Pat and his quartet.

It was very satisfying to have "FEELING FINE—THE STORY OF PAT PACE" broadcast by the Scripps-Howard Television Group and even more satisfying to win a Gold Medal at the 1976 Virgin Islands International Film Festival and two Emmys from the National Academy of Television Arts And Sciences, Cleveland Chapter.

But what sets this film apart are the symphonic sequences. They show that Pat is not only a superior musician, but that an ex-heroin addict who takes daily doses of methadone is perfectly capable of an intricate and exquisitely-coordinated performance. And that is really what "FEELING FINE" was intended to convey. ■

(ABOUT THE AUTHOR: Joseph Horning is an independent producer based in the Cleveland area who also teaches film production at the Cleveland Institute of Art. For further information on "FEELING FINE—THE STORY OF PAT PACE," contact him at 2079 Marlindale, Cleveland Heights, OH 44118.)

AWARDS FOR "FEELING FINE"

1978 National Association of Broadcasters, Ohio State Award
1977 Emmy Award, Producing/Directing, National Academy of Television Arts and Sciences, Cleveland Chapter
1977 Emmy Award, Film Editing
1977 Chris Bronze Award, Columbus Film Festival
1977 Best Independent Film, Cleveland International Film Festival
1977 Award, Great Lakes Film Festival
1976 Gold Medallion, Virgin Islands International Film Festival

CINEMA WORKSHOP
Continued from Page 234

When the mirror swings across the image path, the image is reflected upwards to the ground glass and reflex optics ("E").

Though this design is somewhat more complex than a simple rotating shutter, it is extremely quiet and compact. As a matter of fact, the mirror assembly requires so little depth that the ACL incorporates a behind-the-lens filter holder that is located before the mirror, as well as accepting "C" mount lenses with their short flange-to-focal plane distance.

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WHAT'S NEW
Continued from Page 224

viewing position, and camera operator's viewing from overhead looking down towards top of camera (see photos).

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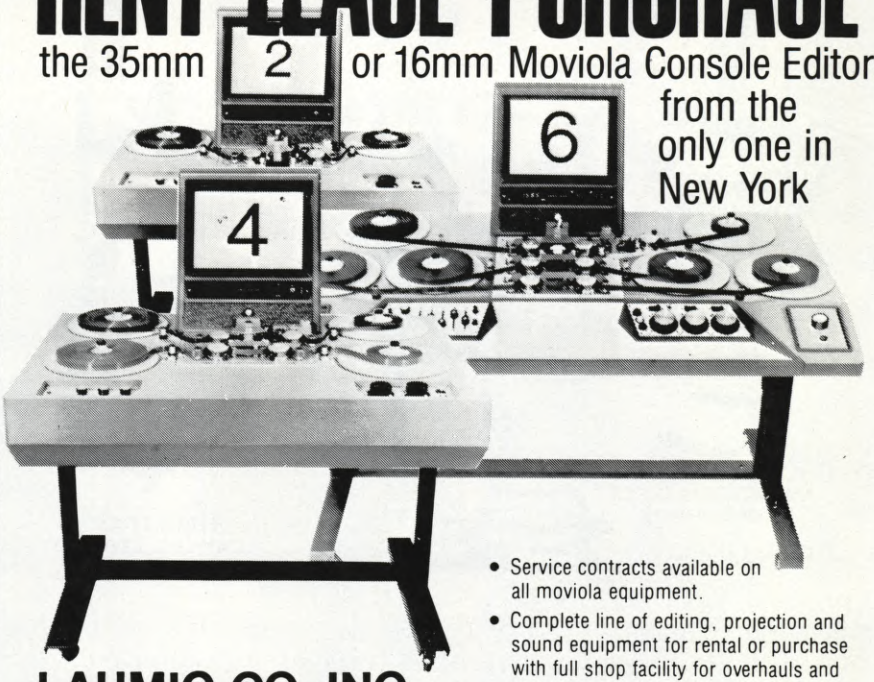

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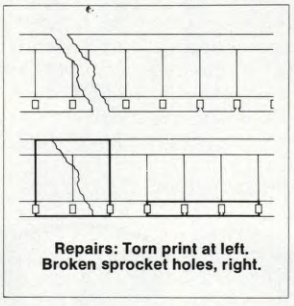

Repairs: Torn print at left. Broken sprocket holes, right.

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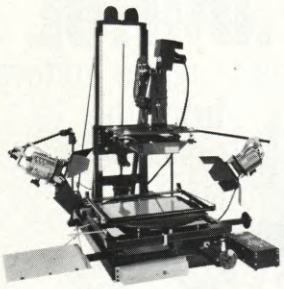

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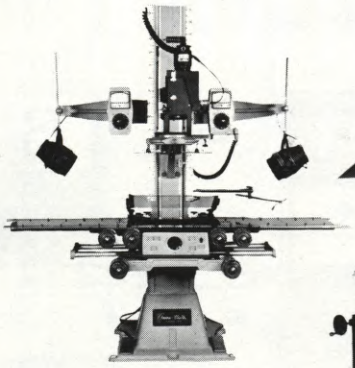

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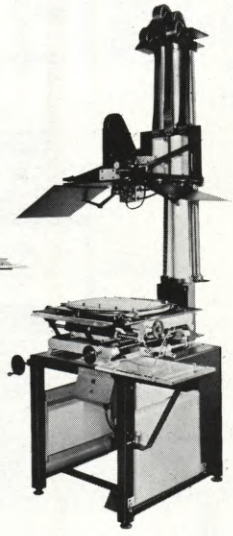

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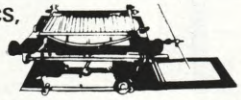

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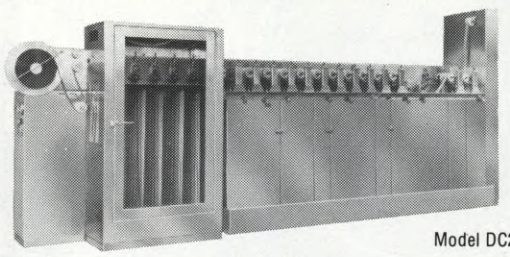

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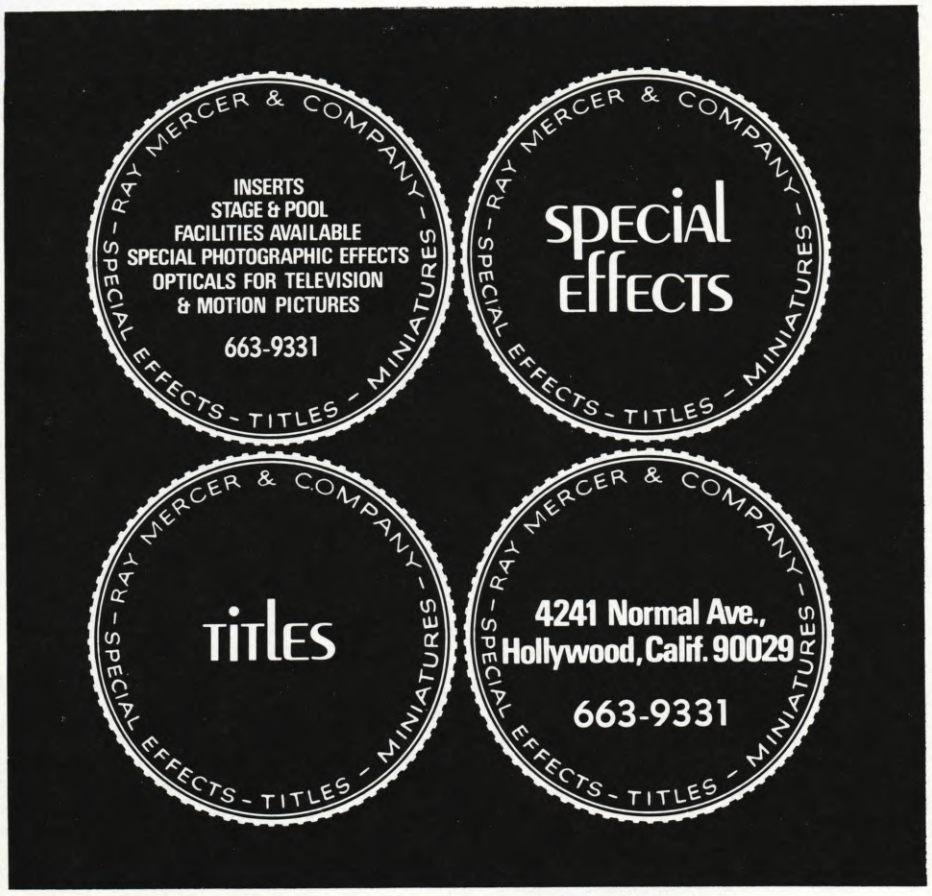

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Contest, Festivals & Grants was compiled over a 3-year period by Los Angeles writer-filmmaker Alan Gadney, who saw the need for such a comprehensive directory while submitting his featurette, "West Texas" to international film festivals. The contest information was just not readily available, and Gadney had to spend years searching for it. During that time "West Texas" won an amazing 48 international film awards, and Gadney decided to compile his knowledge in book form. After further research, over 7000 query letters and continuing correspondence with current worldwide film-TV-photo-writing competitions, and carefully editing each event to fit the detailed format of his book—now over 1500 are consolidated under one cover. And as far as Gadney knows, this is the first time such an accurate and all-inclusive contest guide has been compiled—and under one cover...

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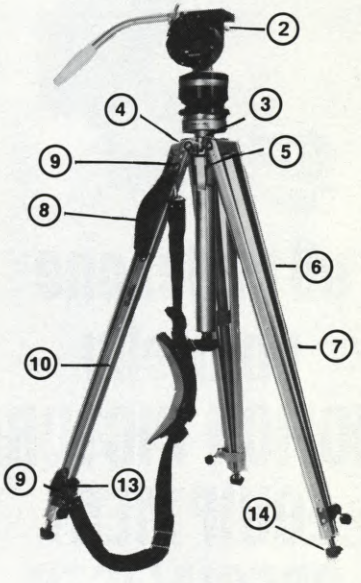

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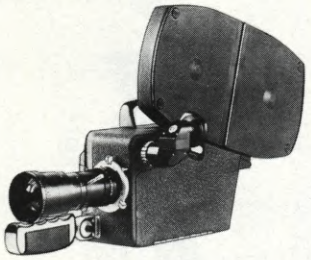

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FILM AND TAPE SUCCESS AT UHF STATION
Continued from Page 267

without problems. A major one was that Cyberski just couldn't get the quality that he wanted for commercials with the Super-8 version of newsfilm.

The answer required a radical departure from the norm. The crews converted from using the professional version of Ektachrome EF film to the so-called consumer—Ektachrome 160 and 40. To do this, they had to make some modifications in their processing techniques. Basically, this involved raising the processing temperature from 95° to 125°F., installing buffer-type scrubbers to remove the anti-hallation backings from the film and varying the processing time. The last was a trial-and-error process that they worked out for themselves.

The benefits are manifold. First of all, the Super-8 cameras—which are now mainly Eumigs and Nizos—automatically adjust their electric eye setting for the exposure index rating of both Ektachrome 40 and 160 (these ratings incidently are 40 and 160), so the films can be used interchangeably according to the situation. Ektachrome 40 film—which is something akin to Ektachrome MS—is much sharper and finer grained than the faster film. In Cyberski's opinion even Ektachrome 160 is sharper than Ektachrome EF exposed under the same conditions—possibly because of the anti-hallation backing, he comments.

"Because of the faster 1.8 lenses available with our Super-8 cameras," he states, "we discovered that we could shoot at least half of our news with the slower, finer grained film with no problems. We started filming practically all of our commercials that way, too The quality is amazing."

LIGHTING TECHNIQUES FOR COMMERCIALS CITED

The vast majority of commercials are shot indoors, since the point generally is to show the retailer and his wres, or the restaurateur and what he has to offer, and so on. In these cases, lighting is pretty much the same as for 16mm. Crews use a Colortran Mini-Pro kit containing three f650-watt variable focus lights, stands, extra cable (since they never know how far they're going to have to run an extension) and extra bulbs. Two of the lights are set up on either side of the camera and as close to it as possible. These two lights help erase shadows from the visible background. Standard barndoors available with the kit are carried, as are diffusion screens which are used to soften the light and eliminate

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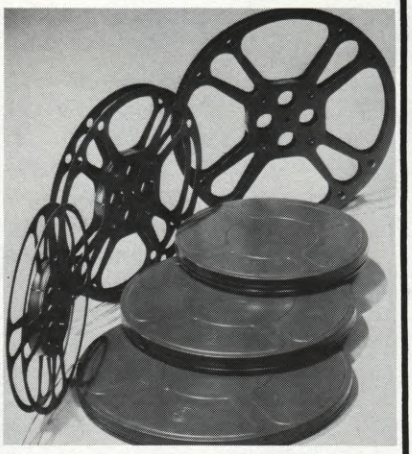

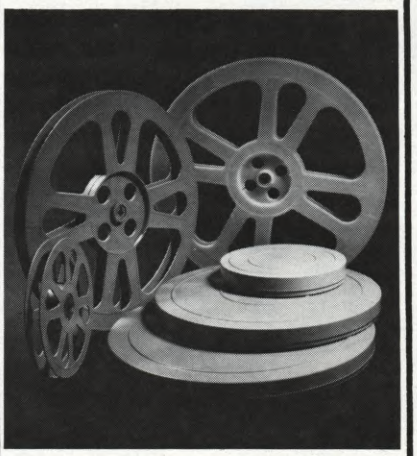

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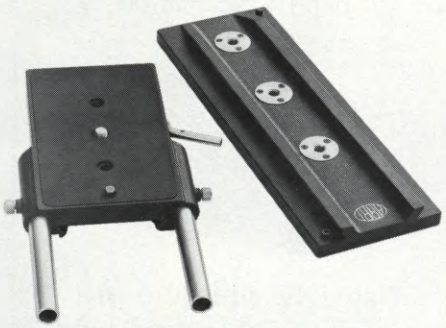

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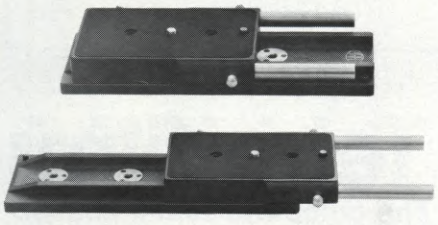

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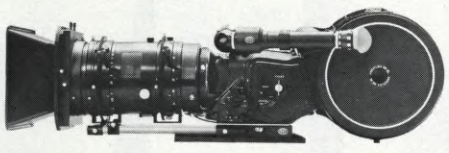

35BL on Bridge Plate. Rod lengths vary from 6 to 15 ins.

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harsh shadows.

The third light is set up to one side behind the subject. Its function is to light the background and give the picture image all of the depth-of-field that the camera lens is capable of recording.

(When covering bigger areas, a Colortran 1000-watt Fresnel light is added for additional front-lighting.)

Cyberski says that they most often utilize the Nizo camera for commercial work because it has an automatic lap dissolve feature which allows creation of many effects while shooting, or the Beaulieu 4008ZM2 because of its long lens.

There are occasions (in news situations mostly) when the faster film should be used, according to Cyberski. "We simply don't have time to set up lights. For situations like these we always carry a battery-powered 650-watt light, since one of the peculiarities of the electric eye camera is that it can sometimes be fooled. For example, there have been times when we have had to film with our subject indoors with his back to a window. In this situation, the electric eye tells the camera to stop down, which obviously would cause us to under-expose the subject. The simple solution is to light the subject's face.

VIDEO TAPE PRODUCTION ADDS ANOTHER DIMENSION

In the mid-70's, KDUB-TV took another exploratory step. They started doing some serious experimentation with on-location videotape recording for news and commercial production. The objective was to see if they could get sufficient quality form the smaller format tape systems to justify an investment in production and transmission equipment.

The target was the $15,000 they were spending annually on film. Initially, they tested the Sony ¾-inch U-Matic system. For practical purposes, this didn't work out for this application, says Cyberski.

"First of all, it required our newsmen to transport at least 60 pounds of additional equipment, including a videotape recorder, power supply rack and monitor. that was a lot of weight and bulk to carry and handle and when we combined it with our lighting power requirements, we sometimes found ourselves coming up short-circuited when the switch was thrown."

There was also another drawback: to do any sort of extensive editing, two quad tape machines were required. Selling for approximately $75,000 apiece, these are expensive machines to tie up in daily editing operations. Furthermore, editing the ¾-inch tape for stories or commercials where a lot of cuts involved was just time consuming.

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Setup in the field is relatively simple, says Cyberski. The actual camera weighs about 7 pounds, its power supply about 10 pounds. The need for lighting stands was eliminated by installing a sort of "unicorn" stud on the top of the camera. This stud is similar to the one on the lighting stands, thus the light can be placed on top of the camera. Though in come instances this results in rather flat lighting, it does have the advantages of producing consistent lighting results, as well as saving weight and set-up time.

With all the improvements that have been made in portable video tape, including the final transfer to quad thru a Microtime time base corrector, the stage is set for some real comparisons between tape and film. Generally speaking, KDUB-TV found the use of the portable color video tape to be the most practical when quality synchronous sound is required. On the other hand, film has continued to be the most practical medium-when total portability and small size is the determining factor, or where extensive editing with a great number of cuts or takes are required.

"In daily applications this means that situations that were traditionally "SOF"—sound on film-interviews, announcements, press conferences, etc. —are now being done on tape. Situations that have typically been covered with silent film—complete with a great variety of shot—is still covered with Super-8 film. the same applies to commercial applications.

"The key to the success at KDUB-TV has been the courage to experiment and innovate in untried areas," concludes Cyberski.

"As for KDUB-TV, the proof is here: We're operating in the black four years after we opened our doors. I believe that we are one of the few survivors among the UHF's that started at the same time we did. And a big reason for this is that we learned quickly how we could produce and program news and commercials competitively, and how to take full advantage of the fine equipment available on the market today." ■

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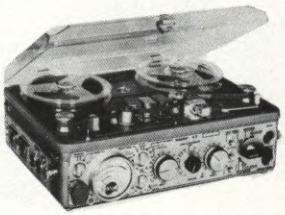

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INDUSTRY ACTIVITIES
Continued from Page 299

Sandwich", plus gold medals for Best Screenplay (Alice Childress) and Best Supporting Actor (Larry Scott). Scott was present, along with Robert Radnitz, Producer, and stars Cicely Tyson and Paul Winfield.

The other major winner was "Short Eyes", which took gold medals for Best Actor, Best Cinematographer, Best Editor, and a Special Jury Award for Creative Excellence.

The Grand Awards Gala was a star-studded event, with Catherine Deneuve, Sylvia Sidney, Paul Winfield, Cicely Tyson, Bob Radnitz, Larry Scott and Burgess Meredith, all in person at the head table. During festival week, audiences thrilled to premieres of over 70 new feature films and more than 300 shorts. There were 23 total sell-out shows, and almost every show played to near-capacity crowds in the three festival theatres. Over 30,000 attended the many premieres during the ten days event.

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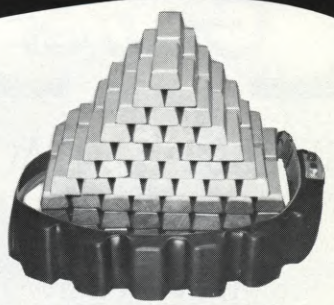

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PHOTOGRAPHING "JULIA"
Continued from Page 286

use. The lighting inside the train we boosted with those big mushroom bubbles–HP2s, we call them. There must have been about a hundred of those inside the train, powered by a generator located in the guards van behind the train.

QUESTION: You had another lovely big thing to photograph, which had to be built because they no longer exist: the transatlantic ocean liner. What photographic problems did that present?

SLOCOMBE: That set was built on what I suppose is the largest stage in England–the "silent" stage at Shepperton Studios. They had to construct a deck of the ship to shoot one or two scenes (which, incidentally, are no longer in the picture), plus the sort of Customs shed and the gangways leading up to the ship. We filmed the seeing-off and returning scenes there, but we only shot for, at the most, two days.

QUESTION: I can remember that at the time it was quite a conversation piece around my company as to how little light you were using on such an enormous set. How did you manage that?

SLOCOMBE: The set was so huge that the gaffers originally talked about using 60 Brutes to light it, but, for a number of reasons, I felt that one could do it with very much less. When it came down to doing it, we had 12 Brutes and about 40 10Ks on the set, but in actual fact, I think we used only half of those lights. We finished up by shooting it with very little light.

QUESTION: We've spoken about American cameramen who have the same gaffers working with them for years on end, but it strikes me that the men on your camera crew have been with you for a very long time—isn't that so?

SLOCOMBE: Yes. My operator, Chic Waterson, has been with me for almost 30 years and my first assistant, Robin Vidgeon, whom we consider to be junior, reminded me that he will soon note the 21st anniversary of when he joined us. Chic and Robin and I have been together for so long that we hardly need to talk. One sort of sets a thing up and knows automatically that it's going to work, because Chic's framing will be

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QUESTION: "JULIA" was photographed in the 1.85-to-1 aspect ratio. Were there any special reasons for using that particular format?

SLOCOMBE: In our very early discussions about the film, we talked about the format to be used and I must say that for many years I have been a firm believer in the Panavision anamorphic (2.33-to-1) format. It's not necessarily because of the shape itself; I think pictures can be composed in any shape. My reason for preferring the anamorphic format is that these days if you shoot in 1.85, you have to compose to 1.66 at the very least, or sometimes even the Academy frame, because the producer wants to cover himself in case of a later television release. This means that the scenes which you have composed so carefully and worked so hard to get are subsequently very often completely mutilated by some projectionist who places his frame anywhere from the middle to the top or bottom. With the 2.33-to-1 aspect ratio, at least, one knows that the picture can be projected only one way, with but the slightest deviation from the norm. At any rate, I put forth this argument to Fred Zinnemann, but he was very much against the anamorphic format which, to this day, he insists on calling "The Bandaid"–so that was the end of that. But at least I was able to use my favorite Panavision equipment–the PVSR, the Panaflex and also, as usual, a couple of Arriflexes (without which I don't think any feature could be made). We also used the extra-fast lenses, which proved invaluable for some of the night work.

QUESTION: As you were telling me, you've seen "JULIA" perhaps 50 times by now. Is it possible that you still discover nuances that you might have missed previously?

SLOCOMBE: Yes, because up until now all I've really examined has been my own work. I still see, with annoyance, my faults and everything I would like to have done. I see where it went wrong and where I could have improved it. I see where it could have been printed lighter or darker or warmer or colder. But I've got to a point now where, knowing that nobody is going to reprint it anything like

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that, there's nothing I can do anymore. As a result, the last five times I've seen it, I've just sat down and watched it as a picture—and I've been terribly moved by it. I find that suddenly I see more and more of the really fine quality in some of the acting—particularly by Jane Fonda, Vanessa Redgrave and Jason Robards. It's terribly interesting to be able to be suddenly moved by a picture after that length of time. It's happened to me very rarely.

QUESTION: Is there anything remaining that you'd like to say about "JULIA"?

SLOCOMBE: Only that it was a very exciting picture to work on, in the creative sense. As a cinematographer, the whole world is your camera and just knowing that you have to create a scene to match a point in a literary script such as this—and sometimes make something out of nothing—adds up to a tremendous excitement. That fact alone justifies one's taking up cinematography. As a Director of Photography, I would want no more. It's a thing I never get over, actually. I just love that moment of suddenly being on the floor without a thought in my head—which, I must say, happens very often—and then just suddenly finding it all coming into place. I think that a writer must feel very much the same thing when he has a piece of blank paper in front of him—and the same hole in the head that I have—and then suddenly the words start to flow. It's a very special kind of excitement. ■

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Arrangements as to availability and other details are to be made directly with the individual A.S.C. member. For further information, contact: American Society of Cinematographers, P.O. Box 2230, Hollywood, California 90028. Telephone: (213) 876-5080.

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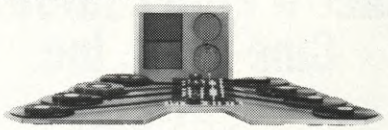

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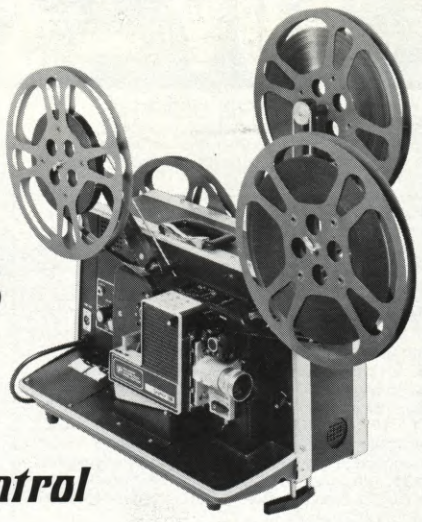

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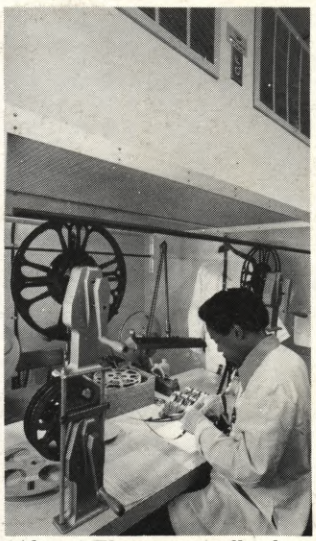

(Above) Electrostatically-clean Negative Conforming Room

(Left) Sony Professional D-100 Video Tape Cassette Duplicators